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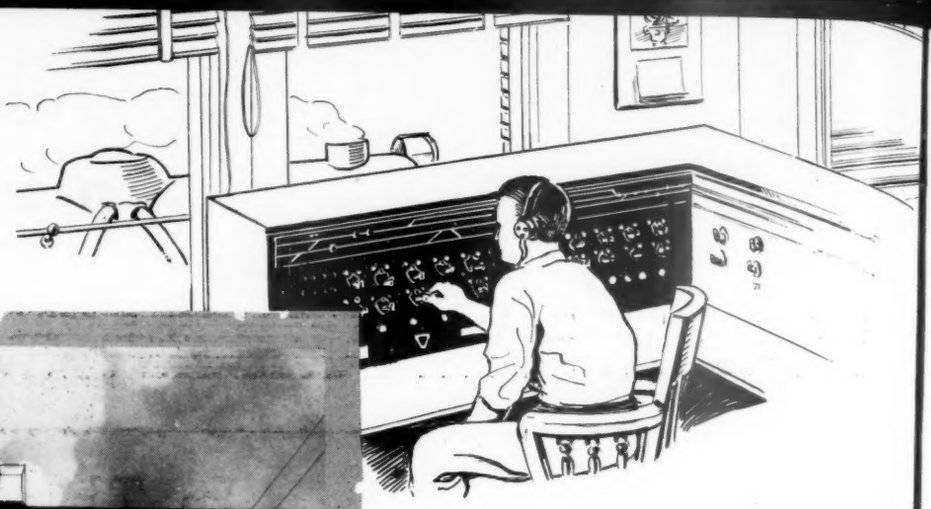

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RAILWAY AGE

The Railroads' Great Unused Asset—Employees' Political Power

Every question which arises regarding the present status and the future of the railroad industry falls naturally into one of two categories—that embracing situations dominated by political pressure, or that where political considerations are absent. The answer to be given to every question about the railroads where politics plays no part is invariably cheering. But where politics does enter in, the answer is either a gloomy one or, at best, doubtful.

Operating Efficiency Not a "Problem"

To be specific—take a few of the aspects of railroad performance where politics has no influence, fuel consumption, for instance. In 1937 the railroads, non-politically, burned only 115 lb. of coal per 1000 gross ton-miles of freight service, whereas in 1921 they burned 162 lb. Nor is there any reason to believe that the figure of 115 lb. will not be improved upon as more efficient locomotives come into use, and as operating practices are constantly improved. The railroads have installed non-political motive power in recent years which is such an improvement over older locomotives that they save enough to pay for themselves in less than three years. Freight train speeds have risen non-politically from 11½ miles per hour in 1921 to almost 17 miles per hour today. Wherever one looks—in shop practices, in the purchases and stores department, in maintenance of equipment, in signaling, in maintenance of way, one finds improvements, not yet forbidden by political power, which are all that anyone could ask for.

In all these phases of railroading, there are no artificial restraints upon human inventiveness and ingenuity to prevent its full exercise in the improvement of railroad transportation service and the lowering of its cost. This is the aspect of railroad service which is closely comparable to the automotive industry and other non-regulated industries, which are so often compared with the railroads' to the disadvantage of the latter. And yet, where railroad skill and enterprise are free, railroad performance parallels, and equals, that of any other alert industry.

But, where political restraints enter into railway operations, the picture is not such a happy one. It is doubtful whether even railroaders themselves realize the extent to which the industry is tied up with political forces; and how many so-called "railroad problems" are not even possible of solution by the railroads. Every one of the serious "problems" which afflict the railroads have their origin in politics, and political action alone can solve them.

Waterway Competition Wholly Political

Take, for example, the problem of competition by waterways and motor trucks. This problem is only to a minor degree a railroad problem, in that it is possible of solution by more efficient railway operation.

As a specific proof of this assertion, take the New York State Barge Canal. This canal last year handled 5,000,000 tons of traffic, as compared with only 1,270,000 tons in 1921, an increase of almost 300 per cent. And yet, in the period that the barge canal has enjoyed such an increase in traffic, railroad rates have been repeatedly lowered, and railroad service has been greatly improved. But these *railroad improvements have availed nothing against the 9½ million dollars that New York State taxpayers contribute each year to keep the barge canal in operation.* The Barge Canal would not move a ton of traffic in competition with the railroads if the 9½-million subsidy were removed. And the source of that subsidy is politics.

Improved efficiency of operation is of little or no help in meeting subsidized competition—because the subsidy can always be increased to meet any improvement in railroad efficiency or service, regardless of how great it may be. Right now there is a strong agitation going on for deepening the Barge Canal to 27 ft. so it can accommodate ocean vessels—the expense to be borne, of course, by the taxpayers. Such an increase in the subsidy would cancel out years of steady improvement in railway operating efficiency. And, even supposing that the railroads could suddenly increase their efficiency enough to offset such an increased subsidy, there would still be the possibility of extending the operations of the Federal Barge Line to the canal—so the taxpayers would then not only subsidize the waterway itself, but the cost of operating vessels upon it as well. Railway

engineers and operating officers are competent men, but they simply cannot hope to save money as fast as politicians can spend it for the benefit of railway rivals.

More Fuel No Cure for Leaky Flues

Competition of waterways and trucks is essentially a political—not an economic—fact. The railways can no more meet such competition by purely economic measures than they can cure leaky flues in their locomotives by firing more coal. Improved operating efficiency will help somewhat to meet this competition—of course. So will firing more fuel help to keep a locomotive going with leaking flues. But the heavier firing will not get at the seat of the trouble, and neither will improved operating efficiency alone—to whatever length it may go—meet the problem of competition, subsidized to limits as yet unknown.

Highway competition with the railways is not, of course, purely political. That is to say, if the subsidies and other public favors which it enjoys were removed, truck competition would not disappear. Nevertheless, if political discrimination in favor of highway rivals of the railways were removed, such competition as they would still offer would be economic; and, as such, it would probably help the railways more than it would harm them. Admitting freely then that there is a legitimate sphere for operation of motor vehicles where they can pay all costs fairly assignable to them, and still do the job more economically than the railroads, the fact remains that today trucks are operating far beyond their true economic sphere.

A Billion-Dollar Subsidy for the Railroads?

For example, recently in Illinois a study of highway costs was made, including an allocation of such costs to each class of vehicle. It was found that the average heavy-duty truck ought fairly to be called upon to contribute $1,361 a year in fees for the use of the highways. Actually, the study disclosed, these vehicles were being assessed only about $365 a year. In other words, according to this study, the average heavy-duty truck in Illinois would appear to be receiving a present of $1,000 a year from the taxpayers to meet a part of its cost of doing business. The average heavy-duty truck is worth, at the outside, probably not more than $5,000. So, what we have in Illinois, it would appear, is a transportation industry competitive with the railroads which is getting annually from the taxpayers $1,000 for every $5,000 that it has invested in rolling stock. In 1937 the railroads had a total investment in rolling stock of approximately 5.5 billion dollars. So, if the railroads were subsidized to the same degree in proportion to the value of their rolling stock as Illinois trucks appear to be subsidized, then the railroads would receive a present of over a billion dollars a year from the taxpayers.

If the railroads should receive such a subsidy as that (which, incidentally, would be about 30 per cent of their 1937 freight revenues), and should apply that gift from the taxpayers toward making reductions in rates on competitive traffic (which is the way the trucks apply their subsidy), then we should have a true test of just how much present truck competition is due to political favoritism. Trucking enthusiasts, of course, contend that their subsidy does not amount to as much as $1,000 per heavy-duty truck. They base this contention, however, largely on an assumption that roads for truck use are largely a "by-product" of roads built for private motorists; and that trucks ought not be charged in full measure for their use of the roads. But that contention itself is political. If the truck operators can succeed in making that theory of the allocation of road costs "stick," they will do so by political methods —because there is no effective argument in favor of the "by-product" theory of allocating road costs to trucks except that of the votes of the trucking industry and its allies. Certainly, no spokesman for the trucking industry could seriously contend that political action has not had a great deal to do with the adoption of 9 tons per axle as the maximum allowable truck weight in so many jurisdictions. (It would be a coincidence indeed if highway authorities in sections of the country where conditions vary so widely should all have found this 9-ton limit to fit all of these varied conditions—in the absence of any assistance from politics.)

What Politics Has Bestowed, It Can Also Remove

Politics determines the maximum allowable weight of trucks. Politics determines whether trucks shall be subsidized much or little. Politics determines whether highway funds shall be spent largely to "pull the farmer out of the mud" by building inexpensive "farm-to-market" roads, or whether, on the contrary, highway expenditures shall be concentrated largely on widening and reducing the grades of inter-city highways to accelerate truck service and reduce its costs. In determining all these questions about truck transportation, politics at the same time establishes the extent to which trucks will be able to make inroads into railroad traffic. Politics has so far answered all these questions in favor of the trucks and, as a consequence, has decreed that truck transportation shall be a far more serious competitor of the railroads than its intrinsic economy would enable it to be.

There is no need to elaborate further—the competition which the railroads are meeting today is far more political than it is economic. Such competition is 100 per cent political in the case of *all* improved inland waterways, because no traffic at all would move upon such waterways if it were levied upon to pay the cost of these waterways. As far as truck transportation is concerned, if we assume that only one-fourth of the traffic these vehicles have taken from the railways is ascribable to the political favors they enjoy, even that would account for an annual loss of traffic to the railroads of $500,000,000 (assuming the gross revenues of the trucking industry to be 2 billion dollars).

But loss of traffic to subsidized competitors is but one of the unfavorable effects of the application of political pressure upon the railway industry.

How to Boost Earnings a Billion

Some other places where politics hits the railroads, as it does no other industry in the country, are the following:

The reductions in railroad rates, necessitated by the existence of subsidized competition, which aggregate hundreds of millions of dollars.

The long-and-short-haul clause, which prevents the railroads from competing on even terms, particularly with the coastal and intercoastal water lines.

The refusal of the rate-making authorities to allow the railroads to make train-load rates. (Competent authorities have informed us that few, if any, pipe lines except for natural gas would even have been built in this country if the railroads had been permitted to establish rates for train-load quantities of gasoline and crude oil, as, of course, the pipe lines are permitted to do. Hence it follows that this political restriction on the railroads has lost to them many millions of tons of petroleum traffic which, but for this restriction, they might today be handling.)

Compulsory contributions exacted of the railroads for unremunerative improvements, such as grade-crossing eliminations.

Full crew and train limit legislation in many states, requiring the employment of men not economically required to perform transportation service.

Labor legislation which has given the final settlement of wage disputes to the political authorities, who are unable in judging such questions to overlook the fact that one party to such disputes has votes which they need to stay in office. (Wage rates in other industries show some tendency, at least, to fluctuate with the prosperity of the industries, but, on the railroads, wages recently have been at an all-time peak while railway earnings were at an all-time low.)

Looking over the above list of a few of the places where politics hits the railroads the hardest, it seems quite clear that unfavorable political treatment cannot be costing the railroads less than a billion dollars a year in loss of traffic, in rate reductions and in additions to costs of operation.

The troubles of the railways are, at bottom, 100 per cent political in their origin. It follows, therefore, that there cannot be any solution to the difficulties which are crushing the industry and its employing power which does not include the removal of at least some of the unfavorable political pressure which is now being exerted against it. No one will deny that knowledge by railroad employees and the general public of the extent to which they are harmed by the present handicaps of the railways would quickly bring a demand for the removal of these handicaps.

Employees Receptive—Leader Awaited

Never before have employees been so receptive as they are today to the idea that whatever harms the railroads, harms the employees too. (Witness in the Southeast the recent formation of the "Mutual Transportation Committee" to combat the further extension of the Federal Barge Line — as but one instance of of which scores could be cited.)

Engineering talent can solve, and has been solving brilliantly, the railroads' engineering problems. Managerial and operating and accounting genius have similarly brought the performance of the operating, purchasing, accounting and other departments up to a high standard of perfection. But in the political realm, the railroads have lagged behind, and at a time when their most pressing problems are political. This lagging behind has resulted, of course, because railway managements have little or no political power. There is only one answer to that kind of a problem—if you don't have the kind of talent you need, then bring it in. The railroads need look no further than their own employees and their security owners for the kind of political skill and power which they need more, perhaps, than they need any other one thing. The security owners are remote from the industry and have not as yet been effectively organized to protect their interests. Railroad employees, however, as far as we have been able to observe, stand ready to give this service to their industry—if only the industry will provide them with the frame-work where they will be able to organize their power.

The employees have already demonstrated in the case of the "safety first" movement what they can do in a matter where their interest and their employer's is identical, if only managerial genius can touch the spark which will actualize their potential energy. Active employee political co-operation appears to await only such leadership as that by which R. C. Richards made the safety movement on the railroads a successful reality.

The Election and the Railways

Study of the results of the recent national election indicates that they will be beneficial to business in general and, therefore, to the railways. The new Congress plainly will be the least radical since the depression began, and opposition by it to such economically unsound policies as have now prevailed for more than five years can hardly fail to stimulate the improvement in business that already has been occurring for six months. What the railways need more than anything else is an increase in their traffic; and for this increase they must rely principally upon continued expansion of production, construction and commerce.

But it seems not improbable the election has complicated rather than simplified the problem of getting legislation helpful to the railway industry. The railway executives withdrew their notices of a 15 per cent wage reduction effective on December 1 because, first, they feared they would lose a strike in which organized labor probably would be backed by the government, and, second, they were promised co-operation by the Roosevelt administration and the labor leaders in securing legislation as a substitute for a wage reduction. It seems to have been believed in some quarters that the President and the labor leaders were sufficiently power-

ful to get almost any railway legislation they might demand.

The *Railway Age* did not at any time share this view; and this paper said last week, "Any program to have a good chance in Congress will have to attract the support, or at least not arouse too much of the antagonism, of the shipping public; and it will not be too easy to formulate a program that will be inviting to railway managements, railway labor leaders and railway customers." The difficulty may have been increased by the election.

The power of the Roosevelt administration has been due to its support by a combination of wage earners and farmers. It is quite evident that on election day the farmers from one end of the country to the other walked out of this combination. The reason is obvious. The New Deal promised labor higher wages and shorter working hours, and the farmer higher prices for his products. The part of labor that is employed has got its higher wages. The average hourly wage of railway employees, for example, largely due to New Deal influence, is now 12½ per cent higher than in 1929 before the depression began. But the New Deal has failed to make good with the farmer. Never within the last nine years have the prices of his products remotely approached their 1929 level; and in August, 1938, they averaged 37 per cent less than in August, 1929. With farm prices only 63 per cent of what they were in 1929, and the average hourly railway wage 112½ per cent of what it was then, the average railway employee can now buy almost 80 per cent more farm products with his pay for an hour's work than he could in 1929. Naturally, in view of such facts, the farmer has finally arrived at the same conclusion that most other middle class persons reached a long time ago—viz., that the present administration is almost entirely what is known in Europe as a "labor government" and that everybody, excepting labor still employed in industry and transportation, is being injured by its policies.

The committee of railway presidents and labor leaders appointed by President Roosevelt to prepare a legislative program for submission to him will make a great mistake if it does not carefully consider the significance of the election. It has sent to Congress numerous Democrats as well as Republicans over whom President Roosevelt will have little or no influence. It has also sent there a largely increased number of Democrats as well as Republicans who know they were elected by the votes of farmers and other members of the middle class in spite of the opposition of labor unions, including that of railway labor unions. It will probably do no good, therefore, for the committee appointed to agree upon and present a program that is plainly intended to benefit only the railways and their employees. Any program, to have a good chance of success, must also be plainly intended to benefit the customers of the railways, especially the farmers. To devise and "sell" to railway customers, any program emanating from management and labor just after railway wages have been left on their present level, will tax to the utmost the ingenuity and energy of those who undertake the task. It probably cannot be done unless organized railway labor will agree, in return for the maintenance of its existing high wages, to make certain sacrifices tending to reduce labor costs, including abstention in future from promotion of "make-work" legislation and co-operation with management in revising present excessively costly working rules and in seeking repeal of full-crew and other similar legislation now in effect in various states.

The assumption of the omnipotence of President Roosevelt and the labor leaders was shown on election day to be ill-founded. The middle class has taken control of Congress again. The help of the President and the labor leaders will be necessary in securing constructive railway legislation; but the help of the middle class and its representatives in Congress will be equally necessary, and will not be secured merely by telling them that any program offered is endorsed by the New Deal and organized railway labor.

Is I. C. C. Usurping Power?

"The Commissioner [Mahaffie] pointed out that Congress gave the Commission no jurisdiction over the compensation and expenses of railroad employees [upon which it ruled in the L. & A. merger case]. Had it intended to do so it could easily have said so, but it did not. 'I think,' he said, 'it is a bad and dangerous policy for a commission such as this to undertake to regulate matters of social welfare without clear statutory authority. Such a policy can lead only to confusion and misunderstanding.'

"The Commissioner is over-conservative in his language. Assuming that he is correct as to the lack of statutory authority for the action of the majority, the majority is guilty of a plain usurpation of power, and this is perhaps the most serious offense that a regulatory Commission can in these days commit against the body politic.

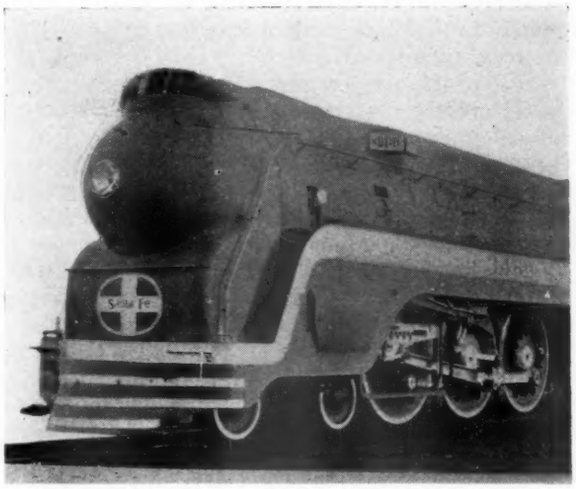
"It was against illicit usurpation of power by administrative officials that the Lord Chief Justice of England, Lord Hewart of Bury, protested in his book, *The New Despotism*, published several years ago. As a result of that book's publication a parliamentary committee was established to study the whole subject of "Ministers' Powers." This committee reported in April, 1932. Its general purport was, in a word, the necessity of keeping all such officials within the strict bounds of the authority delegated to them by law.

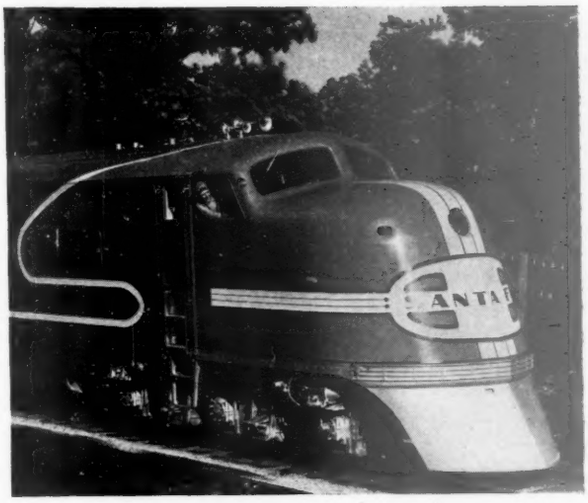
"This newspaper does not know whether or not the Commission's order in the instant case is, as it stands, reviewable by court authority. In any event it should be reviewed by the entire Commission, and the way is open for this by petition in the ordinary course of Commission practice. The companies concerned should promptly present such a petition, so that we may have a clear preliminary exhaustion of remedies in the event that it can finally be taken to court. The matter is far too important to be allowed to rest where it is."

From the Wall Street Journal

Diesel and Steam Locomotives in High-Speed Service*

A comparative appraisal of first cost, operation and maintenance in long-haul passenger service





Inland Picture Service

By E. E. Chapman

Mechanical Assistant
Atchison, Topeka & Santa Fe

OWING to the increase in speed which carriers other than railroads had established, it was necessary for the railroads to give serious consideration to the various prime movers that were in existence to determine whether or not time could be reduced on trains which were operating between important cities. On the Atchison, Topeka & Santa Fe the first consideration in this connection was what could be done to set up a schedule which could be maintained between Chicago and Los Angeles with a view of requiring only one working day to travel between these terminals. Investigation developed it was necessary to handle trains between those two points in 39¾ hours in order to do this.

On September 19, 1934, the Santa Fe placed an order with the Electro-Motive Corporation for a 3,600-hp. Diesel-electric locomotive having top limit of speed of 98 m.p.h. The engineers of the Electro-Motive Corporation and the Santa Fe worked together in the development of the locomotive delivered.

Adapting the Track to Fast Schedules

This locomotive was received in the fall of 1935 and test runs were made between Chicago and Los Angeles. Engineers from both the motive-power and maintenance-of-way departments of the Santa Fe and staff engineers of the Electro-Motive Corporation were present on these runs. During the process of these tests the various parties interested took notes of the problems which would be involved in the making of a schedule of 39¾ hours each way between Chicago and Los Angeles. It was immediately apparent that there was a considerable amount of track work to be done in order to maintain this schedule, such as increasing the length of spirals on curves, increasing the superelevation and, in cases where reverse curves would not allow the extension of the spirals, a single curve with less degree of curvature was developed.

All of this was not done before the start of the 39¾-hour schedule, but as fast as plans could be developed the road was adapted to this increased speed. It was necessary to locate fuel and water stations for this type of power so that the least possible time would be lost en route in taking these supplies. During the preliminary runs it was found necessary to make some additions in radiation facilities for proper cooling of the Diesel engines, as well as to filter the air to be used in the Diesels in order to reduce the wear of pistons and liners.

This first Diesel-electric locomotive was equipped with the conventional waste type lubrication with a constant supply of lubrication by means of a force-feed lubricator. This was not considered satisfactory, so the bearings were changed to the roller type.

Wheel Loads

It was also found necessary to develop a type of wheels to withstand the heavy braking which was necessary at

* Paper presented before the Metropolitan Section of the Society of Automotive Engineers, New York, October 13, 1938.

high speeds on heavy descending grades and heavy service applications made from high speeds to stop. Indications were that the four-wheel truck, which was originally applied to the first Diesel-electric locomotive, was carrying considerably more wheel load at rail than was advisable, both from wear standpoint and from the development of thermal checks from heavy braking. As a result, the second 3,600-hp. Diesel-electric locomotive, which was ordered and built to attain a top speed of 118 m. p. h., was equipped with six-wheel trucks. This change produced a radical increase in mileage between wheel turnings and practically eliminated thermal cracks. Thermal cracks were still further reduced by certain changes in the chemical content of the steel for the Diesel-electric locomotive wheels.

With the change to the six-wheel truck, the driving wheels were first located at the front and back of front and back trucks. It was desired to develop a still more favorable safety factor in the Diesel-electric locomotives and the power wheels were applied to the middle and back wheels on the front truck, leaving the front or guiding wheels without motor drive. Brake shoes were eliminated from those wheels for further safety. The mechanical engineer of the Santa Fe designed these special trucks.

First Cost and Weight Comparisons

During this period motive-power engineers of the Santa Fe had been working on and had developed two new classes of steam locomotives, the bearings on these locomotives and tenders being of the roller type. The locomotives carried 300 lb. per sq. in. boiler pressure, using nickel steel in the barrel of the boilers. One class was of the 4-6-4 type, built for a top speed of 100 m. p. h., having a maximum indicated horsepower of 4,300. The other was of the 4-8-4 type, designed for a top speed of 90 m. p. h., with a maximum indicated horsepower of 5,750. While these steam locomotives were not designed specifically for handling trains on a 39¾-hour schedule, they were so designed that, in case it was necessary for them to handle these trains, the speed and horsepower which they developed would allow them to make such a schedule. At the present time the Diesel-electric locomotives are making the run of 2,227 miles from Chicago to Los Angeles in 39¾ hours with the same Diesel-electric locomotive handling the train from the initial to the final terminal. These trains could be handled with one change of steam locomotive for this distance.

Comparison of the weights of the later type Diesels as compared with the two new types of steam locomotives in working order is as follows:

3,600-hp. Diesel-electric locomotive	583,400 lb.
4-6-4 type steam locomotive and tender	808,700 lb.
4-8-4 type steam locomotive and tender	895,900 lb.

The cost per nominal indicated horsepower runs approximately as follows:

3,600-hp. Diesel-electric locomotive	$100 to $110 per nominal hp.
4-6-4 type steam locomotive } 4-8-4 type steam locomotive }	$33.50 to $35.40 per i. hp.

Another thing of note is the weight per horsepower of the power unit which the two types of locomotives can develop:

	wt. per rated hp.
3,600-hp. Diesel-electric locomotive	162 lb.
4-6-4 type steam locomotive } 4-8-4 type steam locomotive }	188 to 156 lb.

The operation of the Diesel-electric locomotive requires a crew of two, consisting of the engineman and helper and, as a matter of extra precaution during the preliminary stages of putting this power into service and making its operation satisfactory, we are carrying a maintainer on each train.

The availability of the Diesel-electric locomotive has been very favorable, with the fleet on the Santa Fe making an average of 18,500 miles per month and individual locomotives making as high as 27,000 miles per month compared with the two latest classes of steam passenger locomotives making an average of 12,400 miles per month with a high monthly mileage of 18,600. Neither the Diesel-electric locomotives nor the new steam passenger locomotives have gone through a general shopping, but the indications are that the Diesels can be kept in service and various repairs made with a very small amount of delay by having extra spare assemblies for quick exchange. The ability to make repairs on one of the four Diesel-electric units and to keep running with the rest of the units or when power demand is low is of particular advantage.

Diesel-electric locomotives handle trains easily from a state of rest and, with heavy trains, give a minimum of disturbance. Due to their high tractive force trains can be quickly brought to running speed so as to be able to reduce maximum speeds.

Because of the greater maximum horsepower, the new steam locomotives can maintain higher speeds on heavy ascending grades.

The first 3,600-hp. Diesel-electric locomotive handled seven conventional standard heavy passenger cars in the Super Chief train, the total weight being 916 tons, including the weight of the Diesel-electric locomotive, or 510 lb. per horsepower. At the time the second Diesel-electric locomotive was received the Budd lightweight cars were ready for this service and nine of these lightweight cars were used in the Super Chief train, the total weight being 789 tons, including the weight of the Diesel-electric locomotive, or 438 lb. per horsepower.

It should be admitted that Diesel-electric locomotives on preferred runs have the advantage over opposing steam locomotives on regular trains in that time-card rules require opposing trains to clear the preferred trains on which the Diesel-electric locomotives are used at least 5 min. This aids in keeping down maximum speeds on preferred trains, but raises the average speed required to make schedule time on other trains.

Regardless of this fact, however, it has been demonstrated that Diesel-electric locomotives have made remarkable performance on regular daily runs on trains which are not in the preferred class.

The percentage of availability is a rather abstract term, as the use of both Diesel-electric and steam locomotives is controlled by train schedules when each is really available but held for specific trains.

The particular advantage of the Diesel-electric locomotive is the distance it can go between refuelings. Between Chicago and Los Angeles on the present schedule it is necessary to refuel the Diesel-electric locomotive at two points on the road in each direction and it is necessary to take water each way at three different points. With a steam locomotive on such a run it would be necessary to refuel the 4-6-4 class twice between Chicago and La Junta, Colo., this type being changed off at the latter point after running 991.7 miles. The 4-8-4 type is then used over heavy mountain grades from La Junta to Los Angeles, Calif., a distance of 1,235.6 miles, and it is necessary to refuel these locomotives twice between those points. These steam locomotives must have the water replenished in their tenders about every 200 miles or at division points where engine crews are changed with such tonnage as is handled on the 39¾-hour schedule using 3,600-hp. Diesel-electric locomotives. Diesel-electric locomotives also require less time for service and fewer stops for service requirements. This is particularly true in regard to lubrication of running gear. This means the

Diesel equipped trains can maintain lower average speed while running.

Fuel and Lubrication

The kind of fuel oil required for Diesel-electric locomotives is a 28-gravity oil, from 26 to 38 viscosity, Saybolt Universal, and this oil must have certain characteristics in order to secure best results when used in Diesel-electric locomotives, whereas the steam locomotives use a refinery residium, or a cracked residum, the characteristics of which are equivalent of United States specification for Bunker "C" oil. As a result the difference in cost is 1.8 times as much for Diesel fuel oil as for the steam locomotive fuel oil per gallon. Due to the efficiency of the Diesel-electric locomotive it uses about 30 per cent of the amount of fuel which an oil-burning steam locomotive uses, which more than offsets the difference in price per gallon now in favor of the steam locomotive. This includes the use of Diesel oil in the steam-heating boiler of the Diesels.

The lubrication of the Diesel-electric locomotives is an appreciable cost in their operation inasmuch as this oil is high priced as compared with the valve oil used for steam locomotives and needs constant replenishing. It is felt that there is considerable work to be done on the improvement of Diesel lubricating oil in order to get away from its susceptibility to lacquering with consequent sticking of rings, etc.

In case it was possible to have a road operated exclusively with Diesel-electric locomotives a considerable saving could be made on cost of investment, maintenance and operation of water and water-treating-plant facilities. However, where Diesel-electric and steam locomotives are operated over the same territory it is necessary to supply special piping and hose for furnishing Diesels with water at their regular watering stations and also for protection of emergency stations.

The transmission equipment of the Diesel-electric locomotives consists of generators, motors and control equipment which are a considerable percentage of the weight of the locomotive. Refinement in insulation of the electrical equipment may in the future allow a material reduction in weight. Hydraulic transmission is still in the development stage, but it has potential possibilities.

On the 39¾-hour trains it is necessary to provide steam at all times on trains in the winter for heating and in the summer for cooling. This makes it necessary to carry this special equipment which must be light and generate sufficient steam. To date this equipment has been fairly satisfactory and has been simplified so that there has been a radical reduction in the trouble from this account. There is still room for further refinement of such equipment in order to produce satisfactory results.

The Trend of Repair Costs

The cost of repairs of Diesel-electric locomotives handling streamline trains is being constantly reduced so that the cost per locomotive-mile basis compares very favorably with the average for steam passenger locomotives which handle various other main-line trains on this same route operating at considerably lower speeds. However, on car-mile or ton-mile basis the Diesel-electric locomotives show considerably higher costs. On this particular road there are no repair costs available where the same speed is made and the same tonnage hauled, but it would probably be safe to say that on the high-speed runs the cost would be less on the Diesel-electric locomotives than on steam locomotives. The cost of running repairs on Diesel-electric locomotives in switching service has been approximately 40 per cent lower than for equivalent steam locomotives.

The riding characteristics of the Diesel-electric locomotives are equivalent to that of passenger cars which they handle and are distinctly superior to the steam locomotives.

The engineer is located at the front end of the locomotive and his view is unobstructed at all times, he is able to observe both sides of the track, which makes for safer operation.

The effect of Diesel-electric locomotives on track is favorable in that they impart load, traction and speed effect only, while with steam reciprocating locomotives particular care must be exercised in proper counterbalancing of drivers to keep this additional track stress to a minimum.

Engine failures on a mileage basis show that the Diesel-electric locomotive is making more miles per failure. However, at times when it is necessary to do work on the engine over certain parts of the territory where maximum power is demanded helper steam locomotives have been used.

In general, the Diesel-electric locomotive has proved itself very dependable in high-speed passenger service on the Santa Fe. Also, it has proved its worth as a switch engine in which service their availability runs month in and month out well above 95 per cent.

The Diesel-electric passenger locomotives, where used on intermediate-speed trains, have been able to make as high as 27,000 miles per month on prairie territory. However, it will be necessary to develop more power per unit than is available in the present units if Diesels are to be used on intermediate-speed passenger trains with heavy tonnage in mountain service. If this can be done without increasing the present weight of the Diesel-electric locomotives indications are that Diesels can make a place for themselves in all types of passenger service, provided sufficient mileage can be made to offset the unfavorable initial investment cost.

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Courtesy of Associated British & Irish Railways

Fifty Years of the "Scotsman"

The original coaches and a contemporary "single-driver" locomotive of the first "Flying Scotsman" of 1888 were operated once again by the London & North Eastern (Great Britain) to celebrate the fiftieth anniversary of the record-breaking London-Edinburgh express train. The original train covered the 393-mile run in 7 hours 27 min.

Obligations of Labor and Capital

George M. Harrison and Sir Edward W. Beatty present forward looking views at R.R.Y.M.C.A. conference

AMONG the high spots of the Twenty-first Triennial International Transportation Conference of the Y.M.C.A. of North America, held in the Royal York Hotel, Toronto, Canada, November 9-11, were the addresses at the banquet on Thursday evening, November 10, by George M. Harrison, grand president of the Brotherhood of Railway and Steamship Clerks of the United States, and general chairman of the Association of Labor Executives; and Sir Edward W. Beatty, chairman and president of the Canadian Pacific Railway. Mr. Harrison spoke on the obligation of labor and Sir Edward on the obligation of railroad capital and management. These addresses have a special significance at the present time, following so closely upon the settlement of the wage controversy in this country, and being expressed on the neutral platform of an organization which is interested in promoting better and more friendly relations in the railway field. Extracts from the addresses follow.

Sir Edward W. Beatty

George M. Harrison

Mr. Harrison's Address

When I was invited to come here, I hesitated because of the press of other business, but I realized at the same time that since the Railroad Y.M.C.A. has done such splendid work in looking after the spiritual and material comforts of railroad workers, perhaps I ought to come and say a few words of greeting and discuss in a limited way the opportunity of railroad labor to perform a real service for the industry in which it is engaged.

And then I am happy for a further reason that I accepted, because I believe that recent events have made it possible for representatives of labor and representatives of railroad management to get together around the conference table and discuss and consider the common problems of our industry. I am happy to see this development because I have long advocated that there is a mutuality of interest as between workers and managers of industrial enterprises, *and that one of the greatest concerns that workers have respecting an industry is its stability, its prosperity and its opportunity for continued development and growth.*

We in the railroad industry feel that our industry is in one of the most critical periods in its history, and it is going to take the combined effort and all of the thought and intelligence that all of us—management and workers—can give to the problem to find a solution for our difficulties. I believe that can be done because recently there has been a more sympathetic attitude on the part of officers of government towards that situation than ever before in the recent history of the industry, and we do have a terrific problem.

We have a problem not only growing out of the general recession in business, but we have a problem that is aggravated because of the development of several forms of competitive transportation facilities. We also have a problem that is aggravated because the very nature of our industry is such that it has not been able to adjust itself to these new conditions. It is rooted in its traditions; it is subjected to the most minute federal regulation and it does not have the opportunity to adjust itself to the ever-changing and new problems.

We have found in the recent past that much of the transportation business of our country has left the rails and has gone to the buses and the trucks, the waterways, the pipelines and the airlines. This has so reduced the volume of business, that our industry has not had that which has been necessary to sustain it in position to carry on effectively and in a prosperous way to serve the people of the country. It has undertaken to acquaint the public with its problems, but because of other distressful economic conditions in our country, it seems as though

the railroads have been left to pretty much a solution of their own difficulties, and so we have drifted along under these conditions until there has developed a very serious and chaotic condition.

Recently, the President of the United States appointed a committee, consisting of representatives of management, governmental agencies and labor, to give some thought and study to the problem, but, because of the multiplicity of interests and perhaps the impossibility of reconciling our various interests, very little progress was made.

And so the President apparently decided that perhaps it might be well to lodge the responsibility with the workers and the managers in the industry. A short time ago he appointed a committee, consisting of three railway management officers and three representatives from the ranks of railroad labor, and he laid upon us the responsibility of developing and recommending to the government a program for the rehabilitation of the railways of the United States.

Unification of Regulation

Unless we go after the fundamental problems we certainly can make no genuine contribution. Foremost in that connection one of the greatest sources of aggravation is that of competition, not only competition in service, but competition in rates and competition for public favor; and so I believe that essential to a rehabilitation of the railroad industry *must come a unification of regulation of all forms of transportation under a single governmental agency, with a fair field for all, with handicaps and favors for none.*

We must give detailed consideration to the development of water transportation now operating on ways provided at the expense of the people of the country and under a system which is no less than a huge subsidy to that form of transportation. Literally millions have been spent to develop waterways now being used by private operators in competition with the railways.

Economically it is sound and socially it is desirable that there must be a fair field of competition not only in transportation but in business as well, and if that be true, then certainly we can rest our case in that direction in our appeal to the public to place upon these other forms of transportation such fair charges as may represent the value of the subsidies that they have heretofore enjoyed at the public expense.

Much can be done through the unification of the regulation through a single agency by the development of a system of fixing rates that will have a tendency to direct the various forms of transportation in the most economic channel; and by that I mean that trucks and buses perhaps under a system of fixing rates could be diverted in their operations to the field of short distance operations and the longer, heavier traffic could be reserved for other forms of transportation, particularly the railroads. It need not necessarily be discriminatory in character because, after all, what the people of the countries are interested in is getting the most efficient and economical form of transportation service, and certainly it is socially undesirable and economically unsound to have several agencies of transportation competing in an uneconomical field for traffic that is only sufficient to support at least part of the existing facilities claiming a share of that business. I think with the development of a joint system of rates as between the rail and water carriers, much of the traffic can be put back on the rails where it can be handled more economically than is now being done on the subsidized ways of water transportation. Pipelines are, of course, a problem, one that pretty much relates itself to private industry. Perhaps there is a general answer to that, but for the time being if we could get some relief in this other general direction, that situation would not be of such great concern.

Revamp Federal Regulatory Machinery

Our federal regulatory agency is now overburdened with a mass of details that has prevented it from seeing the real transportation problem of the country. It not only undertakes to discharge the duties of Congress in the legislative field of fixing rates, fares and charges, but it undertakes to decide disputes and in that sense is a court; and then it has a multiplicity of administrative and executive functions that undoubtedly do not belong in an agency of that nature.

And so I am of the opinion that one of the prime requisites to future regulation and federal administration of our several forms of transportation is a revamping of our federal regulatory machinery by the separation of the judicial and legislative functions from the executive and the administrative functions of the Interstate Commerce Commission, and that we ought to establish in our government what might be called, for the want of a better name, a Department or Secretary of Transportation, and it should be the duty of that department to encourage and promote the development and prosperity of the transportation machine of the country.

Along with that I think there is *a splendid opportunity for labor to make its contribution not only directly by influencing policies that will permit transportation to develop and grow, but by bringing to the public a better understanding of the problems of the industry and the necessity for fair treatment to that great agency so essential to the development and growth of the country.*

Restoring Credit of Railroads

Right now we have got most of our railroad controversies out of the way, and we are in a position to make a real, genuine contribution in the direction of aiding management and government to solve some of these difficult problems of the industry. While it is not primarily our responsibility, I should like to see the development of an entirely new policy concerning the financial practices of the industry, and particularly the method of financing its needs. I should prefer to see a shift to the general policies pursued in Great Britain and get rid of this practice of constantly piling up debt in the way of borrowing money and floating bond issues that we are unable to support in these various business cycles. That can't come, of course, by the waving of a wand, because people have put their money into the industry and they are entitled to consideration, but it can come by the statement of *a new policy which will permit the industry to earn over a long period of time sufficient profits that will permit it to lay aside funds to take care of it in lean periods of business and to retire some of its outstanding debt.*

That would persuade me to believe, as a representative of labor, that what we have got to have is a restatement of the whole philosophy of the rate-making rule of the Interstate Commerce Commission as spelled out in the Transportation Act of 1920. I should much prefer to see a return to the principle that was stated before the amendment in 1933; and that is in substance that the railways shall have rates that will permit them to earn in the various rate-making territories as a group, sufficient net profits after operating expenses, depreciation and retirement and taxes, a fair return upon the value of transportation property devoted to public service, taking, as I say, the longer period of time, embracing several business cycles, perhaps some 15 or 20 years, subject to readjustment and resurvey at periods of every three years, based upon earlier experiences. If that is done, in my judgment it will have a greater influence in restoring the credit of the industry than any other single thing that can be done.

Turn the Wringer

Then, again, we have got some impossible situations in the way of waterlogged, debt-ridden railroads. There is only one remedy for that, and that is get hold of the wringer and turn the crank. That is inevitable! Various antidotes can be administered; the life of the patient can be prolonged, but when the upsurge in business comes those particular railroads will find their physical properties in such condition that the struggle of competition will choke them to death. The kindly thing to do now is to put them in shape to meet the struggle that the immediate future holds for them. In my judgment that can be brought about, to a large extent in a painless fashion, by the federal government putting funds into these reorganization proposals at low interest rates, whereby the government can take the securities of the reorganized roads; then, as business revives, they can be disposed of to the public, and the government in the final analysis will have made no contribution except for the temporary use of its services, its credit and the general confidence that it lends to the industry itself.

So far as labor is concerned, I think with its deep and pro-

found interest in the industry, certainly it has got to adopt a sympathetic attitude to a solution of all of these problems.

I believe that labor possesses that broad vision, that broad interest that will permit it to make this great contribution that it now has an opportunity to give to the industry. I know from my experience that there is a desire and a spirit on the part of management officers to accept that tender of co-operation by labor, and I know from discussions with responsible officers of government that now is the greatest opportunity that we in our industry ever had to make real progress in the way of placing the industry on a sound and substantial basis. Labor can be very helpful in that direction. It can be helpful by taking a broad view and by trying to solve its own and contribute to the solution of the problems of the industry as such.

Sir Edward's Address

Sir Edward Beatty devoted the major part of his address to a review of the work of the Railroad Y.M.C.A., paying it a high tribute. He also made specific suggestions for broadening and enriching its program. In closing his address he commented upon the responsibility of railway capital and management as follows:

I was asked to speak on the responsibility of railway capital and management. I take it that this means the responsibility to others—the duty which lies on capital and management to use any powers which they may possess for the common good.

In these times, we are apt to hear slurring remarks about the "profit motive." Not infrequently, these come from the same men who say that private enterprise has been incompetent; that it has missed its chance. The man who argues at one and the same time that, for example, railway and capital management have been commercially unwise in some of their policies, and that they have also been guilty of predatory greed involves himself, not in a necessary contradiction, but in a complicated argument, from which he is not likely to emerge with any record of success.

The fact is simple that railway capital and management are in the hands of exactly the same sort of people who constitute railway users and railway workers. They are not people gifted with any inspired wisdom; they are not able to see any further future than anyone else. They must, of sheer necessity, adapt themselves to the circumstances which surround them.

On one point they must be very consistent. They must try, as far as it is possible for them to do so, to earn returns on the capital invested in their enterprises. I wonder exactly how many of those who speak of capital and labor realize that, in such a case as the railways, the capital is very largely held by insurance companies and fiduciary institutions. It is in the hands of men who do not own it themselves, but who are under a sacred obligation to see that the capital is not lost if that can be avoided.

Now, as soon as I say this, someone will immediately retort that, if we are to put the rights of capital first, then we are putting the rights of labor last. I do not believe this for one moment. I do not believe, to be perfectly frank, that labor has any right except to receive a fair reward for the work which it accomplishes. I do not believe that capital has any right except to be given an opportunity to earn a fair reward by fair methods.

What I should like to remind you is that there is no distinction at all between labor and capital. Labor is entitled to its daily earnings. These are in no way morally different from the daily earnings of the accumulated labor which we call capital. No one will ever be able to show that the worker is any more or less entitled to a return for his day's labor than will be his widow and orphans to a return on the investment which the insurance company has made on their behalf from the savings which the worker made in his lifetime.

Incidentally, may I remind you that it will not do for railway capital and labor to forget the third party in their scheme —the user of railway services. He also has rights, and woe betide us if we forget them. *Actually, I become a little impatient at all this talk of rights. I am absolutely and unchangeably convinced that what is good for capital is good for labor and the customer.* Therefore, the responsibility of capital and management, as I understand it, is to try to cooperate with labor to operate railways as efficiently and economically as possible. If that is to be done by giving labor less than its fair share of the rewards of operation, then it is not being done well. Capital will never serve its interests by exploiting labor. Equally, of course, labor will never serve its interest by exploiting capital. Neither of them will meet anything but disaster if they attempt to exploit the customer.

Therefore, the responsibility of capital and management is, as I see it, to develop a really intelligent attitude; to remember that those who work must be fairly treated; to remember that those who are dependent on the returns of capital for their livelihood must be fairly treated; to remember that the customer must be fairly treated.

We have no source of inspired wisdom to tell us what to do. We can only learn by experience, and steer our course by trial and error. We should be extremely unwise were we to imagine that we could afford to neglect the opinion of the other partners in our enterprise. Thus, the first responsibility of capital and management is to gain and hold the confidence of the workers.

Naturally, the opinions and advice of the worker will be valuable to capital and management exactly to the extent that they are the views of men who are reasonably well informed about the facts of the industry in which they are employed, and intelligent enough to appreciate them. The responsibility of capital and management thus includes the unavoidable duty of doing everything possible to encourage the worker to improve his knowledge and his ability to reason.

I have tried to avoid overstressing the importance of the word "Christian" in your title. After all, however, is what I have said more than to admit, in simple words, that the responsibility of capital and labor is to adhere in all their dealings as closely as possible to the Christian ethic? Is it more than to say that co-operation—which is the very essence of the Christian system; goodwill—which is the highest of Christian virtues—are and should be the guiding principles of the relations of capital and management to the worker and to the public at large?

The Railroad Young Men's Christian Association should be a real symbol of the type of society which we are striving to build. The workers know that, in this case, capital and management were ready to cooperate with them in their own intelligent efforts to improve their lot. I can assure you that intelligent capital and management today know fully their duty and their responsibility, and that, with the intelligent cooperation of labor, they will live up to it.

Conference Findings

The Conference at its final business session on Friday, November 11, endorsed the findings of a group report on Christian Solutions to Problems Facing the Transportation Industry. Included in these findings were the following:

"That emphasis should constantly be placed by both management and labor on the necessity of giving the best possible service to the consumers, and that no amount of discussion about artificial expedients for relieving unfair competition would produce the results desired. Primarily the future of railway transportation rests in the hands of the industry itself.

"The group had its attention called to the great increase in mutual understanding between men and management today as compared with a quarter century ago, and it was felt that in the railroad industry these relations were very much better than in many other lines of industrial activities. It was stated, for example, that during the last twenty years in Canada, not once has a referee been called upon to settle a dispute referred by management and labor to the Board of Adjustment. On the contrary agreements have constantly been reached between management and men in conference among themselves. This has been brought about by the fact that the militant approach to problems has long since passed in favor of the rational approach. Looking to the future, it is the feeling of the group that all questions in dispute can be disposed of in this spirit of mutuality.

"It was also felt that the Y. M. C. A. can in its conference, as well as in its local situations, help to foster the spirit of each seeing the point of view of the other."

Looking Across the Completed Deck of the Bladensburg Road Bridge of the Pennsylvania at Washington, D. C.

Overcomes Problems in Welding Wrought Iron Bridge Decks

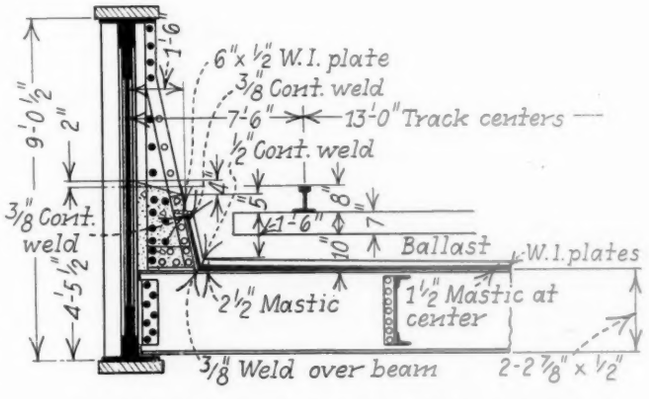
Procedure employed in the construction of street crossing on the Pennsylvania was designed to prevent buckling and creeping of the plates

IN the construction of a recently-completed through plate-girder street bridge on the Pennsylvania, embodying a deck of ½-in. wrought iron plates arc-welded in place, a special welding technic was employed which was designed to preclude the buckling or creeping of the plates during the welding operation. In this technic, the welding work was conducted in such a manner as to prevent the accumulation of heat in the plates, which leads to troublesome expansion, and embodies as its principal feature the use of the "back-step" method of making the butt welds between adjoining plates.

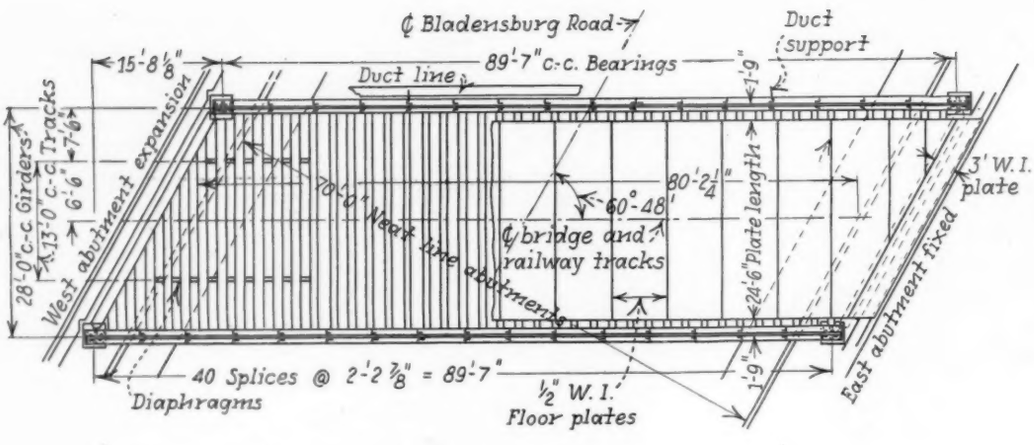
In this method, each pass of the weld (each weld was built up in three passes) is made in successive increments of equal length, the welding of each increment being started at its forward end and carried backward to a junction with the forward end of the last previously completed increment, the process then being repeated with the next increment. By thus breaking the continuity of the welding operation along the joint, excessive localized accumulation of heat in the metal is avoided and expansion of the plates is reduced. On the Pennsylvania, the use of this technic, together with other measures that will be described later, was effective in preventing any buckling or creeping of the wrought iron deck plates.

The bridge on which the procedure was used is located at Washington, D. C., where it carries the double-track main line of the Pennsylvania over Bladensburg road, at an angle of 60 deg. 48 min., necessitating a skew structure. Formerly, the bridge at this location consisted of a three-span through plate-girder structure with a concrete floor, which was carried on stone masonry abutments and structural steel bents at the curb lines. The width of the underpass between abutments was 70 ft., including a 40-ft. roadway and two 15-ft. side openings, which carried walks.

As it was desired to make available a roadway 60 ft. wide at this location and to increase the under-clearance from 13 ft. 10 in. to 15 ft., it was decided to replace the old structure with one having a clear span between abutments, and to increase the vertical clearance by lowering the roadway. During the entire period of reconstruction the railroad was carried on a detour track and on a temporary bridge over Bladensburg road, thus enabling



Typical Section Through One of the Girders, Showing the Position of the Wrought Iron Side Plates



Cut-Away Plan of the Bladensburg Road Bridge, Showing the Arrangement of the Wrought Iron Deck Plates

the contractor to carry on his work without any problems incident to the maintenance of traffic.

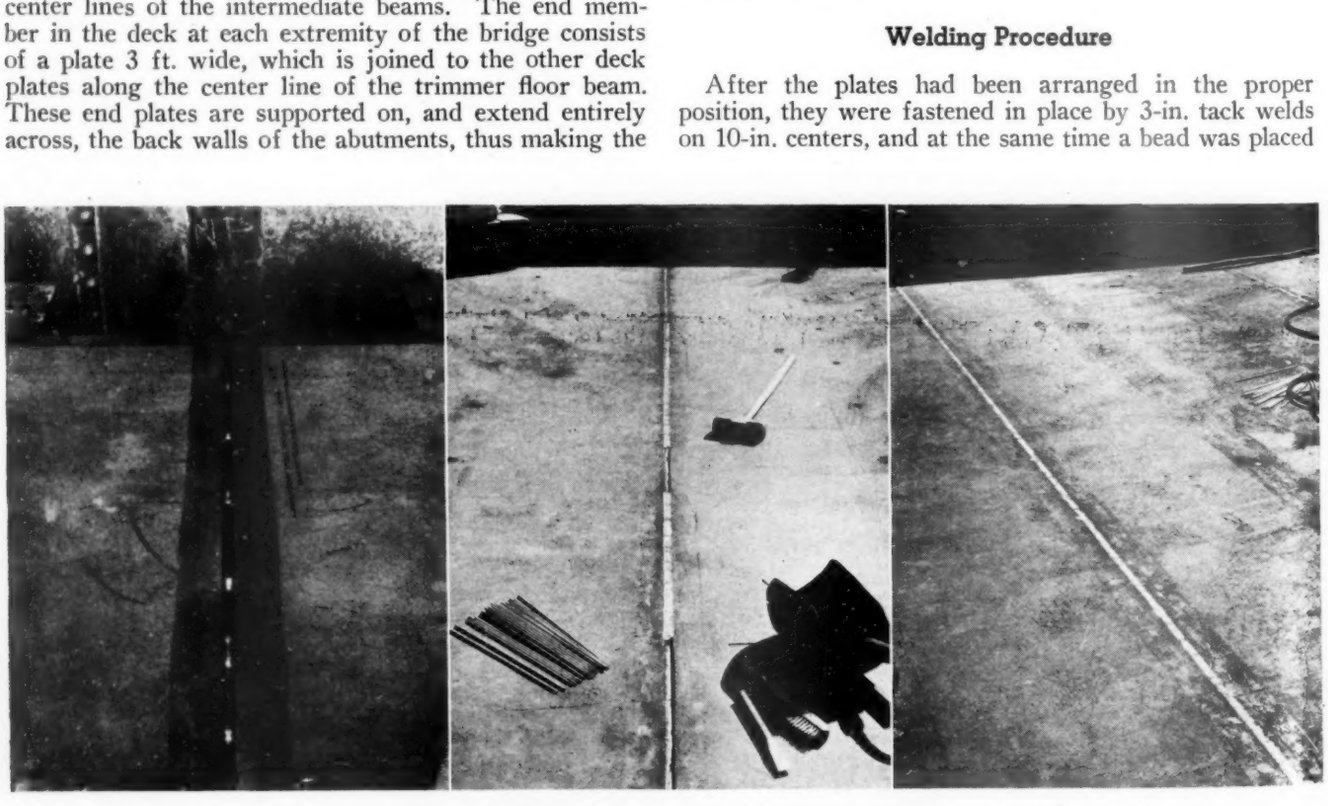
Deck Construction

The floor system of the new bridge embodies 27-in. 145-lb. I-beams on 2-ft. 2⅞-in. centers, which are connected by two lines of diaphragms. Covering these beams and welded directly to them is the wrought iron deck which consists of plates 6 ft. 8¼ in. wide and 24 ft. 6 in. long, except where shorter lengths are used at the ends of the bridge. Thus, the plates are of such length that, when laid transversely, they cover the deck for its full width between the lower ends of the floor beam brackets, and are so arranged that the splices between adjacent plates fall on the center line of each third floor beam. They are spliced to each other and fastened to the floor beams by means of continuous V butt welds which are supplemented by plug welds on 18-in. centers along the center lines of the intermediate beams. The end member in the deck at each extremity of the bridge consists of a plate 3 ft. wide, which is joined to the other deck plates along the center line of the trimmer floor beam. These end plates are supported on, and extend entirely across, the back walls of the abutments, thus making the wrought iron deck continuous between the back faces of the abutments.

During the erection of the bridge, the work proceeded in the conventional manner except for the placing of the floor plates. In this phase of the work, all the plates were first arranged on the deck in the positions in which they were to be welded, care being taken to provide the proper openings between adjacent plates to insure the fastening of the plates to the floor beams, as well as to each other. Thus, adjacent plates were separated a distance of $\frac{5}{32}$ in. at the bottom of the V, this distance being equal to the diameter of the welding rods used for the first pass, as experience had indicated that the maintenance of this relationship assures the best results. It was also considered desirable to bevel the edges of the plates in such a manner that when they were arranged in accordance with the foregoing rule, the gap at the top of each joint would be equal to the thickness of the plates, or ½ in.

Welding Procedure

After the plates had been arranged in the proper position, they were fastened in place by 3-in. tack welds on 10-in. centers, and at the same time a bead was placed



Steps in the Welding of the Wrought Iron Deck Plates

Left—A Typical Joint in the Wrought Iron Deck, Showing How the Plates Were Held in Place Initially by 3-In. Tack Welds. Center—The First and Second Passes of the Butt Weld Along This Joint Have Been Completed and Work Has Started on the Third and Last Pass. Right—Partial View of the Wrought Iron Deck After Both the Butt and the Plug Welds Had Been Completed

around the bottom of each plug weld, this being made possible by the provision of relatively large holes for these welds. During the tack-welding operation, the plates were pressed down firmly against the floor beams by means of a "rock buggy" carrying about 1½ tons of foundation stone, which was mounted on rollers so that it could be moved about as the welding progressed. A 5/32-in. coated rod was used for making the tack welds.

After the tack welds had been completed, the butt-welds were made in three steps or passes, each pass being made by the "back-step" method in increments about 10 in. long and being extended along all butt joints in the deck before the next pass was started. For the first pass a 5/32-in. rod was used, while for the second and third passes, the welders used 3/16-in. rods. The rod that was used, known as the Reid-Avery No. 8, has the following chemical analysis: Carbon 0.08 per cent to 0.10 per cent; manganese 0.4 per cent to 0.6 per cent; and sulphur, phosphorous and silicon each under 0.05 per cent.

In making the tack welds and the successive passes, the operations were carried forward in accordance with a definite plan. In each case, the work was started at the center joint and proceeded both ways simultaneously toward the ends of the bridge. Likewise the weld in each joint was started on the center line of the bridge and was carried each way simultaneously toward the girders. The same path was followed in making the plug welds, this step being carried out after the other welds had been completed.

To complete the trough of the bridge deck, a vertical side plate 17 in. wide, consisting also of ½-in. wrought iron plates, was placed against the floor beam brackets of each girder and fastened in position by V butt welds at the splices between adjacent plates and by a continuous weld at the angle formed by the junctions of the side plates with the deck plates. These plates were first tack-welded in position, after which the welds were made in two passes.

Along each side of the bridge the space between the side plate and the web of the girder and above the tops of the floor beams was filled with concrete which extends several inches above the tops of the side plates. The surface of this shoulder slopes toward the center of the bridge, and as a means of preventing water from percolating between the concrete and the side plates, a wrought iron apron plate, 6 in. wide and ½ in. thick, was fastened in the horizontal position to the top edge of each side plate. This apron, which is fillet-welded to the side plate, projects 1½ in. beyond the outside face of the latter plate while the remainder is embedded in the concrete shoulder.

Asphalt Mastic for Drainage

Because of its projecting lip, the apron plate also serves to protect the top edge of a coating of asphalt mastic that covers the side plates as well as the entire deck of the bridge. While the welded deck is, of course, watertight and it was not necessary to apply waterproofing, it was desirable to provide some means of directing the flow of water for drainage purposes, and to this end the mastic was applied. So that the drainage will be toward the longitudinal center line of the bridge from both sides, the coating of mastic varies in thickness from 2½ in. at the sides to 1½ in. in the center. As the bridge deck is built on a grade of 0.0057 per cent, it was not necessary to make a similar provision to obtain longitudinal drainage. At each end of the bridge, the mastic is protected by a dam plate that was shop-welded to the end deck plate and that varies in width to correspond to the trough-like cross-section of the mastic.

The welding organization employed on this project by the contractor consisted of a foreman, four welders, two welder helpers and one machine engineer. Welding current was supplied by four 300-amp. direct-current gasoline-engine powered generators.

This project was financed and the construction supervised by the District of Columbia, using federal funds. However, the bridge was designed under the direction of E. B. Temple, chief engineer of the Eastern region of the Pennsylvania, and A. R. Wilson, engineer of bridges and buildings of the Eastern region. Finished plans, in which the railroad design was incorporated, were prepared under the direction of C. R. Whyte, engineer of bridges of the District of Columbia. All welding work was done by the American Electric Welding Company, Baltimore, Md., under a sub-contract awarded by the general contractor, the Diamond Construction Company, Washington, D. C.

I. C. C. Would Wipe Out C. & E. I. Common

WASHINGTON, D. C.

WIPING out the common stockholders and reducing the interests of the group now in control of the former Van Sweringen "empire" from a clear working majority to 12.4 per cent of the road's voting power, Division 4 of the Interstate Commerce Commission with Commissioner Mahaffie again dissenting, adopted on November 15, a final plan of reorganization for the Chicago & Eastern Illinois which would reduce the total capitalization from $80,894,000 to $61,000,000 and the total fixed charges from $1,772,810 to approximately $505,000. The plan, which will now be certified by the commission to the United States District Court for the Northern District of Illinois, Eastern Division, follows closely the proposed report of Examiner Milo H. Brinkley which recommended a capital structure of $65,000,000 and fixed charges of approximately $505,000.

Mahaffie Says Capitalization Is Too High

In his dissenting opinion Commissioner Mahaffie disagreed with his colleagues of Division 4 when they decided to make the plan effective retroactively as of January 1, 1937, pointing out that the new company's position would be endangered by the fact that it would have to pay accrued interest for two years on bonds to be issued. He also felt that the $61,000,000 capitalization was "at least $5,000,000 too high."

The capitalization of the reorganized company, after the consummation of the plan, will be substantially as follows: Equipment Trust Certificates, series A and B, $408,000, equipment trust certificates, series C, $1,008,000; Evansville Belt bonds $142,000; prior-lien bonds, $11,159,000 out of an authorization of $20,000,000; income bonds, $15,354,500; and preferred stock, $15,354,500 out of an authorization of $20,000,000; a total of $43,426,000; and no par value common stock of 343,297 shares out of an authorization of 1,000,000 shares.

Equipment Trusts to Be Assumed

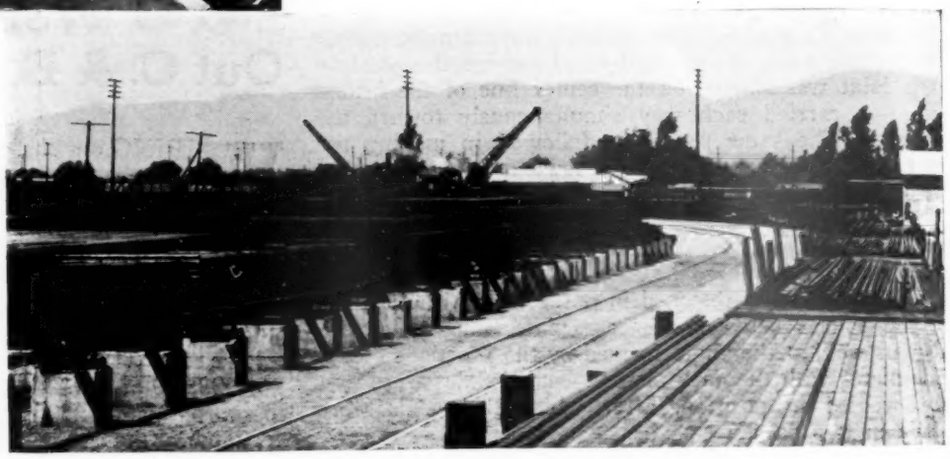
Equipment trust certificates, series A and B, $408,000 and series C, $1,008,000, will be assumed by the re-

(*Continued on page 750*)

Railway Stores and Railway Economies

Interest and opportunity of supply departments in reducing costs considered in meeting on West Coast

At Sacramento on the Southern Pacific



Santa Fe Rail Mill at San Bernardino

WHAT railway purchasing and stores departments are doing and can do in protecting the railroads from losses and in conserving the huge sums spent annually by the railroads for materials were considered at a recent meeting of the Pacific Railway Club in San Francisco, Cal., when several papers on the subject were presented by spokesmen for the steam railroads and other transportation companies operating in Western territory. Papers by C. R. Holmes, storekeeper in charge of the Santa Fe's large distributing store at San Bernardino, Cal., and by S. L. Bouque, assistant to general storekeeper, Southern Pacific, Pacific System, are presented here in somewhat abbreviated form.

Santa Fe Methods

By C. R. Holmes*

Money invested in material is in the process of being converted into the one product a railroad has to sell, i.e., transportation. If this investment is larger than it should or need be, it means increased costs of transportation, and decreases in the net profit. The interest on capital invested unnecessarily in material and supplies is money wasted.

It seems to be a human trait to hoard material, particularly material that is hard to get when needed. To combat this as far as possible, material should be available and delivered promptly when ordered, if for immediate use. To this end, the Santa Fe contracts about 60 per cent, in dollar volume, of all its purchases. These contracts run from 30 days to two years, all subject to a 30 to 90-day cancellation clause. In addition, on approximately 500 items of material not embraced in term contracts, we obtain competitive prices the first of each month. These cover about 25 per cent of the dollar volume of purchases, and together with the term contracts, embrace 85 per cent of the purchases, on which orders are placed without the delay required to make formal inquiries for competitive prices after the requisitions have been received.

Purchasing and stores departments on all railroads have more than justified their existence by their modern low cost material handling, reclamation, and conservation. Other departments can increase the saving by working closely with the store departments, giving as much advance notice as possible of needed, particularly on non-standard items, or where excessive quantities of standard items are required.

Distribution Methods

Hundreds of local freight and passenger shipments are avoided on the Santa Fe by using supply cars. Between district and division stores, we have at least one car per week to each store, and two and three cars per week to the larger division stores. These are straight car loads, billed direct to the division stores, and the

* Storekeeper, A. T. & S. F. Railway Co., San Bernardino, Cal.

material reaches its destination more quickly than by local freight shipments. The straight cars are set to the storehouse platform, whereas local shipments go to the freight house and must be trucked to the storehouse or transferred into a car and switched to the storehouse. On the Coast Lines of the Santa Fe, over half the division stores have telephone connections with the district store, and if necessary, can order material by 'phone on the day their car is scheduled out.

Experience has proved that the best way to reach the outlying points is through the medium of the supply train, which affords opportunity to check stations, section tool houses, signal houses, pumping plants, etc. The saving is hard to estimate, but when the supply trains were first put in operation, we found large quantities of surplus stationery, tools and supplies, some of them hid away in attics, and others piled overhead in section tool houses and pumping plants. The supply trains always work over a division in one direction, and scrap and serviceable materials are placed at definite locations. The supply cars are in the same relative position each trip, so that at one stop the magnet crane can load the scrap and any heavy material, such as bad order push cars. Underground storage tanks for mixed gasoline are filled through a hose from the tank car. Switch light oil containers are filled, and tools, signal material and supplies unloaded at the same time. Division officers accompany the train, and with their help, we always cancel several items of material. These trains, in addition to saving local shipments, make it unnecessary to wrap, pack, bill and mark all this material. They clean up the line with the minimum number of cars, and reduce the loss of company material. The value of the supply trains should not be determined by the amount of material they issue, but also, by the amount of material that is not issued as a result of their operation.

To avoid expense in rehandling, we supply the stores with oil, gasoline, distillate, boiler compound, waste, etc., in distribution cars, direct from the manufacturers, consigning the cars to the nearest store and routing them for the shortest haul.

Another economy is the use of modern equipment by the store department for the handling of material. Cranes of various kinds, tractors, trailers and lift trucks are used, depending on the conditions, and on the volume and kind of material to be handled. This equipment can only be operated economically with good roads, and these have been built. At the larger points, trailers are set at definite locations in the shops and roundhouses in which to place the scrap as it accumulates. Tractors deliver the empty trailers, and take the loaded ones direct to the scrap yard. This helps to keep the shops clean of scrap, and assures a regular flow of scrap and stabilized employment in the scrap yard. Any serviceable material found in the scrap is made available for use, avoiding the purchase of new. For turnings and borings we use dump trailers.

Savings in Scrap

Scrap is handled at several points on the system, but the main reclamation plant is at Corwith, on the outskirts of Chicago. Scrap must be sorted very carefully by experienced men for three reasons:

(1) To be sure that all material in the scrap is really scrap. In one year we returned to service without any repairs of any kind 604 tons of serviceable material, having a value of $63,755.

(2) To pick out material that can be repaired at a saving over the cost of purchasing new. At our tin shop, where tinware is repaired and manufactured out of scrap, after all expenses, including interest on the investment, taxes, depreciation, etc., a net profit is shown of $20,000 per year. Reclaiming valves shows a profit of $36,000. Reclaiming hose fittings and mounting new hose shows a profit of $86,000. Reclaiming machine and carriage bolts saves $85,000. The blacksmith shop shows a profit of $178,000 while the reclamation plant has reported a total annual saving of $500,000.

(3) Scrap must be sorted carefully to be sure it is put in the proper classification to bring the highest scrap price, and the market has to be watched, for it often pays to rework scrap by shearing or cutting, in order to put it into a class bringing a higher price. The Corwith plant is the result of years of study, work, experience and ideas gathered from a number of other railroads and commercial concerns, and has had visitors from nearly every railroad in this country, as well as from several foreign countries and from a large number of private industries.

At San Bernardino, we have a rail straightener, a rail cold cut saw, a drill press that will drill three bolt holes in a rail at one time, a tie plate punch and a spike straightener. By the use of modern equipment, we have made a saving of from $6.15 to $15.34 per gross ton on rail, converting what would otherwise be classed as scrap into relaying rail for branch lines, side tracks and yards, good for several years' additional service. The cost averages 97 cents per gross ton for unloading, sorting and reloading, and 88 cents per gross ton for straightening and reconditioning. Regardless of whether the rail is to be used or sold, the expense of reconditioning is more than justified by savings which, under normal conditions, run from $75,000 to $85,000 per year.

Grain Door Repairs

At Newton, Kansas, we have a modern grain door plant. This was built to insure an adequate supply and proper distribution of cooperage material, with which to make cars grain tight, and to eliminate loss in transit in the heavy grain producing sections. Shipment of the grain doors to the line is handled as far as possible in cars suitable for grain loading so that they can be stored and used in this service when released. The grain door plant has storage facilities and modern equipment, transfer platforms, tractors, trailers and gravity conveyors, to handle the doors at a minimum expense. All bad order doors are delivered to the grain door shop and doors damaged beyond repair are dismantled and the serviceable lumber recovered for use in making repairs to other doors. Each year shows a net profit of about $250,000 for repairing doors over what new doors would have cost. About 41 per cent of our issues are reclaimed doors.

A substantial saving is also made in the reclamation of oil, grease, packing and laundering of wiping rags.

Southern Pacific Methods

By S. L. Bouque*

On the Southern Pacific every item that is used, from the smallest to the largest, passes through store department hands. There are certain items which are not actually received and handled at the storehouses but on such items the requisitions of the using department must clear through the store department. This procedure affords us the opportunity to make the most of developing economies in material and supplies. The men on the firing line on whom we depend to execute the orders

* Assistant to General Storekeeper, Southern Pacific, San Francisco, Cal.

are the section stockmen. These are the men in charge of various groupings of our material. One man may be in charge of one particular group or several, depending on the volume handled at his particular store.

A Log of Economies

A section stockman is a very busy man and must have a thorough knowledge of the material he handles. In his every-day contact with his material he develops many economies and in order to perpetuate these, as well as pass the information on to all other points handling similar material, the department keeps a log book of economies. The economy practices in this book are grouped under six distinct headings:

A. Savings through manufacture in shops in place of purchase,

B. Savings through change in method of purchasing,

C. Savings through substitution of cheaper items of material,

D. Savings through miscellaneous economies,

E. Savings resulting from the return to manufacturers for credit such items as reels, sacks, barrels, exhausted elements, etc., and

F. Savings in commissary store operations.

Economies resulting from reclamation of material are listed in a separate book under reclamation practices.

Handling Lumber

We are constantly on the watch for new methods for handling materials such as the use of certain types of automotive equipment, lift trucks, skids, etc. A unique method of handling lumber was developed at the El Paso, Tex., general stores, and shows how various phases of material handling can be co-ordinated. Lumber is loaded from piles on to a push car on the track leading into the mill, run through the machine and onto an empty push car which moves out of the mill. A lift truck then picks up the push car, lumber and all and moves it to a service track alongside the cars being repaired and the push car moves to the point where required. There is no unnecessary handling in the entire operation.

At Sacramento, journal bearings are placed in metal skids at our foundry, moved to storage, and as requisitions are received from line stores, the skids are moved intact to cars. Where the consumption warrants, the skid load is moved to the repair tracks. In many instances the journal bearings are never touched from the time they are placed in skids at the foundry until they are taken out for application to a car.

Store door delivery was developed in the stores department many years ago. For delivery of material to the line, supply cars are used. The economy in supply car operation has been proved and the costs are known. Where supply cars are not operated, costs result for waybilling, packing, tagging, shipping, unloading by trainmen, handling from freight houses to sections, picking up scrap by hand, stopping trains, switching and setting out cars. All of these are a burden on the payrolls, although they are generally included in other operating costs which bear the burden.

Supply car operation also affords further economies in the control over material issues. An exchange system for the old article lessens the opportunity for waste, theft and misuse of materials. It permits a check to be made on the ground and also the economical recovery of surplus supplies and tools. A gasoline-operated magnet crane accompanies the supply cars for handling rail, frogs, track scrap and other heavy materials. This is more economical and less hazardous than handling by section gangs.

A gasoline tank car distributes, in the same manner as a service station, gasoline for motor cars, and tie tampers, and oil for signal maintainers and section forces. This procedure eliminates all costs of handling drums and the purchase price of gasoline in tank cars is considerably less than gasoline in small quantities.

Scrap is accumulated at concentration points at Sacramento, West Oakland, Los Angeles, El Paso, Texas, and Brooklyn, Oregon. Here it is carefully sorted and many items that find their way into the scrap are reclaimed through welding or other practices.

Stock Books

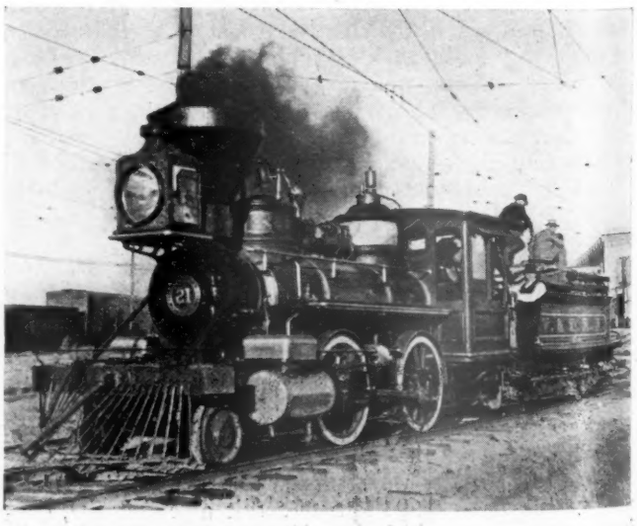
The stock book is our Bible. It contains the information necessary when placing orders for replenishment of stock. Once each 30 days every item of material on hand is counted, although we carry 40,000 to 50,000 items.

Surplus material will naturally accumulate at one point or another because of the curtailment of work or for other reasons. To utilize these dormant stocks and avoid further outlays of cash, we use surplus stock lists. Surplus items are reported every 30 days to the general stores at Sacramento and West Oakland. Items reported as surplus are entered in the master stock book and every purchase requisition is checked against this book before passing to the purchasing agent for purchase.

A Standardization Committee

We are constantly working towards standardization and simplification of stocks. A general committee includes the purchasing agent as chairman and representatives of the mechanical, maintenance of way, transportation and stores departments; other committees are organized at each store. Records on certain materials are examined at intervals to determine the quantities used and their annual cost and this information is then presented to the heads of using departments. The studies generally disclose improvements or changes which reduce costs.

* * *



The "J. W. Bowker," an Old Virginia & Truckee Locomotive Owned by the Railway & Locomotive Historical Society, Pacific Coast Chapter, After a General Overhaul at the Southern Pacific's West Alemeda Shops

Roads Should Perform Freight Forwarding Services

Unless carriers develop some cooperative set-up, the I. C. C. will seek legislation regulating present consolidators as transportation agencies

WASHINGTON, D. C.

RAILROADS, by appropriate cooperative effort, should take over the business now handled by forwarders, merging it with their own l. c. l. operations in such a way as to perform a complete merchandise-freight service, either by themselves or through one or more wholly owned and controlled agencies, according to the I. C. C.'s decision in the Freight Forwarding Investigation. If the railroads fail to accept this advice—and the record reveals "no persuasive reason" why they could not—the commission thinks that "the only effective means of correcting many of the abuses practiced by forwarders . . . is by enactment of legislation regulating the forwarder so as to prohibit unreasonable, unjustly discriminatory, and unduly prejudicial and preferential rates, charges, rules, and practices, and regulating specifically the relations between the forwarder and other transportation companies."

The forwarder method of handling traffic, the commission said at another point, "has made for itself an important place in the transportation field," but "because of the reduced rates and increased services demanded of the rail lines it is clear that the latter have not gained as much as they should from this forwarder service." Thus the commission "shall expect respondents, individually or in co-operation with each other, to evolve means of establishing adequate charges for extraordinary services performed by them on forwarder traffic."

The report, which was made public on November 15, reveals that the case was decided more than a month earlier on October 11. Separate opinions were filed by Commissioner Meyer, who concurred generally in the results but thought that the proper way to settle questions of lawfulness of certain practices was to institute proceedings in the courts; Commissioner Caskie whose concurrence in part was subscribed to by Commissioner Lee; and Commissioner Eastman with whose partial dissent Commissioner Mahaffie agreed while Commissioner Miller joined in part of it.

Calls Forwarders "Essentially Traffickers in Rates"

Commissioner Caskie sees no need for the existence of forwarders, which, he says, "are essentially traffickers in transportation rates . . . the beneficiaries of numerous concessions and advantages accorded them by the transportation agencies that use them." Statutory recognition and regulation of the forwarder in his opinion "would only needlessly add to the existing surplus of transportation agencies." It is "inconceivable to him that the "usually alert" railroad managers will continue to delay the l. c. l. pooling plan recommended in the merchandise-traffic report of the former Federal Co-ordinator of Transportation; for he thinks that "the only real solution" is for the railroads to develop a co-ordinated set-up which will render "uneconomical and unnecessary the intervention or participation of forwarders or other non-carrier third parties."

Commissioner Eastman's opinion is a more lengthy one. He thinks the majority viewed the facts "from a faulty perspective," and that its conclusions "suffer from the consequent distortion." The former co-ordinator does not appear to be alarmed over the alleged abuses; he believes that the principal forwarding companies have done "a rather remarkable job." And from his experience with the general subject he does not think that the railroads "will take any constructive action wholly of their own volition." Thus he does not favor the postponement of forwarder regulation. As Mr. Eastman sees it, one trouble with the present situation is that "the benefits of the forwarding companies are poorly distributed among the railroads." His own view still is that there should be two nation-wide agencies operating over different groups of railroads and competitive with each other, and he suggests that "there is much to be said" for having such agencies independent of railroad control.

The majority report occupies 104 pages, and is divided into chapters with findings spread throughout after each of various discussions where conclusions were found to be warranted. Although, as the report says, the commission reached conclusions "differing to some extent" from those recommended by Examiner R. N. Trezise, the discussion follows generally that embodied in the latter's proposed report which was reviewed in the *Railway Age* of September 25, 1927, page 411.

The Forwarder Set-Up

The introductory remarks are followed by a description of forwarder operations and a listing of the more important forwarding companies, with special reference to the "big three"—Universal Carloading & Distributing Company, National Carloading Corporation and Acme Fast Freight, Inc. These had aggregate gross revenues in 1936 of about $102,000,000, "equal to about 45 per cent of the total revenue received by the railroads in that year from less-than-carload shipments." Universal is found to be "linked to the New York Central by a chain of three intermediate organizations known as the United States Freight Company, the Linden Corporation and the Securities Corporation;" most of National's stock is found to be owned by the Standard Carloading Corporation, which in turn is owned by three holding companies owned by the C. & O., the Erie and the Pere Marquette; Acme is without a financial tie-up with the railroads, being controlled by its president, T. A. Bradley, and his immediate family. It is also noted that the B. & O. recently acquired an interest in the General Carloading Company, operating between Chicago and New York.

The explanation of forwarder operations lists the more

important forwarder routes and points out how the forwarder finds his profit in the difference between the l. c. l. and the carload rates. Also, it is brought out that, aside from transcontinental traffic, the forwarders ship between 35 and 50 per cent of their tonnage by line-haul motor trucks. It is conceded that forwarder rates have undercut express charges, but reductions on other tonnage "have been comparatively small." Meanwhile, the express companies are handicapped in the competitive situation by regulations which do not apply to forwarders and by their inability to reduce rates "without permission from controlling railroads."

In similar fashion the report goes on to retell the now familiar story of various abuses which have developed because of what Examiner Trezise called the "servile attitude" of the railroads. The discussion of occupancy of railroad facilities by forwarders cites various specific examples to support its generalization that "there is a constant struggle between many of respondents for supremacy by granting the use of facilities, without regard to the expense involved, presumably on the theory that they will recoup any such losses by revenue derived from increases in traffic." Findings on this matter are that the carriers, to the extent that the rentals are inadequate, grant concessions from their tariff rates and violate sections 2, 3 and 6 of the Interstate Commerce Act. Also, that "the practice of many respondents in furnishing space for holding freight moving in interstate or foreign commerce at rates which are not published in tariffs on file violates section 6 of the act."

Tariff Rules for Benefit of Forwarders

The discussion of "General Traffic Rules" describes how these have been developed for the benefit of forwarder traffic; how the all-commodity rate was "especially designed to meet the needs of the forwarding companies;" and how the stopping-in-transit idea has been broadened. On the subject of "Ordering and Furnishing Cars" the report describes devices whereby the forwarder gets "a liberal supply of empty cars" for daily loading requirements. These include the nominal order for a 50-ft. car with the understanding that two 40-ft. cars will be furnished, and the placing for forwarders of milk, express-refrigerator and baggage cars. There follows a discussion of light loading of forwarder cars as the commission leads up to a conclusion that any agreement that two smaller cars will be furnished upon an order for a larger car "is a device to circumvent applicable tariff rules and in violation of section 6 of the act, and is in substance a falsification of records in violation of section 20(7) of the act." It further finds that a reasonable restriction in this connection "will be that one of the cars, the longer of the two if of different lengths, and subject to different minimum weights, shall be charged at actual or estimated weight subject to the minimum weight fixed for such car, and the remainder of the shipment loaded in the other car shall be charged at actual or estimated weight and carload rate, but in no case shall the total weight charged for the two cars be less than the minimum weight fixed for the car ordered." Another finding made at this point is that the practice of permitting freight for stop-off points to be loaded into separate cars, regardless of whether the initial car is loaded to capacity, is in violation of section 6.

Loading and Unloading Forwarder Traffic

Next comes an extended discussion of railroad costs and revenues from loading and unloading forwarder freight. The practices at various points are described and viewed as warranting a finding that certain named railroads "will be expected promptly to examine into the cost of loading and unloading forwarder freight at their various terminals, with a view to revising at an early date the tariff charges for such services so that they will adequately cover the cost thereof." With respect to billing of shipments the commission found that violations of the act resulted from the practice of applying all-commodity rates on straight carloads of higher-rated individual commodities when billed as part of forwarder merchandise consignments. In this connection is the further finding prohibiting the use of all-commodity carload rates "in all instances where more than 50 per cent of the weight of the lading or of the minimum weight thereon, whichever is higher, consists of any one commodity on which the straight-carload rate and minimum weight result in higher charges than those at the all-commodity rate and minimum weight."

Other violations of the act are found to result from the practice of permitting forwarders who use more than one car for a single consignment to ship a less than carload quantity in one car on one day, and on the following day ship in another car sufficient freight to get the carload rate on the two movements, billed as one shipment.

Along somewhat similar lines the commission goes on to make findings designed to halt alleged abuses in connection with stopping of cars in transit to complete loading or to partially unload and split origins and deliveries. It then discusses train and switching services afforded forwarders, finding that the practice of expediting forwarder shipments "is not attributable to the perishable or other inherent nature of the commodities transported and is an undue preference of forwarder carload traffic against other carload merchandise traffic in violation of section 3 of the act." Also, condemned as unlawful is the alleged failure of the railroads to render freight bills and collect promptly from forwarders.

Railroad solicitation of freight for forwarders is next discussed as the report goes on to consider the amount of forwarder freight handled by each of several roads. The New York Central is the leader in the latter connection; it handled 69,552 cars in 1936, "most of it coming from Universal." Its consideration of revenues and costs from forwarder traffic leads the commission to suggest that "greater profits might be realized by respondents if a more aggressive policy of solicitation were adopted to attract merchandise traffic to the direct handling of the rail lines, and if expedited services on such traffic somewhat like those now accorded forwarder traffic were maintained." Railroad transport companies, "not a specific issue in the present proceeding," are nevertheless discussed at some length—a discussion which brings forth, among others, the finding that "the practice of respondents, directly or through their transport companies, of carrying forward as advances on outbound l.c.l. billing from break-bulk points, forwarder charges which cannot be verified by tariffs on file, except bona fide c.o.d. charges where such carrying forward is authorized by tariff, is in violation of section 6 of the act."

Some Railroaders Find Forwarder More Efficient Than Themselves

Dealing with the attitude of railroads and shippers toward forwarders, the commission notes that officers of railroads receiving a large volume of forwarder traffic "expressed doubt whether the rail lines could adjust themselves, either from an economic standpoint or otherwise, to perform themselves the services now accorded the public by the forwarder." As the commission later

puts it, the contention of the advocates of the forwarder "is, for example, that it is economical for the Universal but uneconomical for the New York Central to issue a bill of lading or receipt on the individual shipments, carry them to the freight station, deliver them at destination, issue an individual freight bill on each shipment, and collect the charges on each of them." Also, "most of the respondents handling considerable forwarder traffic appear eager to retain the forwarder as at present, but possibly with some regulation;" although "a few of the important trunk lines, among them the Pennsylvania, which, in proportion to its total merchandise traffic, handles relatively little forwarder traffic, do not share the view that the forwarder is a necessary transportation agency." The commission's "major finding of fact" in this connection is the above-mentioned one that "this record reveals no persuasive reason why the rail lines could not, by appropriate cooperative effort, afford an efficient service on l.c.l. forwarder traffic, including collection and delivery thereof, either by themselves or through one or more wholly owned and controlled agencies, at l.c.l. rates specially designed to attract such traffic, and thus retain for themseves the entire profits from such service."

There follows a detailed discussion of railroad control of forwarder, leading to the conclusion that the New York Central, the Erie, the Chesapeake & Ohio and the Pere Marquette are thereby "rendering the public a service by indirection, which is unauthorized by tariffs on file;" and are thus violating the act. As for the Baltimore & Ohio, the extent of its "domination and control" of the General Carloading Company "is not disclosed."

Rate Policies Fostered Forwarder

The report closes with the commission's general observations wherein the railroads are chided for past rate policies which fostered the development of the forwarder by widening the spread between carload and l.c.l. rates. As much of the traffic now handled by forwarders was being diverted to trucks, the report says, "the rail lines made practically no effort to retain or retrieve it by the establishment of rates or services that would meet the situation." Later in the same connection it is suggested that "if respondents had given the same consideration to the establishment of particular rates in order to accommodate their merchandise traffic to the changing demands of trade as they have to relaxing rates, rules and practices in order to foster the forwarder, the revenue results to them might now be more favorable." The matter of now taking steps in this direction, the commission goes on, is "primarily within the discretion of respondents."

Meanwhile, despite the attitude of railroads receiving the bulk of forwarder traffic, the report adds, "it is imperative that steps be taken to prevent any extension of the lavish and wasteful services bestowed upon forwarder traffic without adequate charges therefor and the consequent present tendencies of certain respondents to dissipate their revenues." Answering advocates of legislation to regulate the forwarder as a shipper, the commission expresses doubt that any legislation of such a character could be enacted without bringing "abuses even more grave than those under the present law." It does believe, however, that "many of the problems which have arisen by reason of the forwarder might be solved under legislation which would recognize the forwarder as performing a normal function as a transportation agency under federal regulatory laws patterned after those governing rail and motor common carriers." The commission will recommend this type of legislation if the railroads fail to take its advice and perform their own consolidating operations. (In its recent decision on the status of Acme Fast Freight, Inc., as reported in the *Railway Age* of July 23, the Interstate Commerce Commission found that forwarders are common carriers at common law who were left unregulated under the Motor Carrier Act.)

Meanwhile if it becomes evident that discontinuance of the present abuses results in losses of traffic to truck lines the commission asked to be advised so that it may give consideration to "an appropriate invesigation of the practices of motor carriers in their relation to the forwarding companies."

Commissioner Eastman's Views

In addition to the observations mentioned above, Commissioner Eastman, in his partial dissent, stated it to be his judgment that "the two most important and significant facts developed by the investigation are that the forwarding companies, whatever the defects of their operations may be, have been of marked benefit to shippers and also to the carriers whose services they utilize. . . . They have been among the most successful practical exponents of the principle of coordination between rail and truck service." The former coordinator thinks the majority should have been more specific, in which connection he quotes the recommendation that the railroads take over the forwarder business, finding that he agrees in part and disagrees in part aside from the fact that the passages in question "ought to be amplified by a bill of particulars." He goes on to reiterate his view that two forwarding agencies should be created, and to suggest that such a plan should be followed by a simplification of the l.c.l. rate structure. In the latter connection "the present express rates could well serve as a general model in respects other than level." Also, he sees no reason why the proposed agency or agencies "should not compensate the railroads and other carriers whose services they utilize, just as the Post Office Department compensates the railroads for carrying the mails, i. e., on the basis of cost of service plus a reasonable profit as determined by this commission."

Not Adapted to Compulsory Legislation

Next comes Commissioner Eastman's above-mentioned statement that he does not expect the railroads to take any constructive action, but he does not think the project is adapted to "direct compulsory legislation." It is rather a job for the proposed Federal Transportation Authority recommended last spring in the report of President Roosevelt's first railroad committee, consisting of Mr. Eastman and Chairman Splawn and Commissioner Mahaffie. After minimizing the alleged abuses in connection with forwarder occupancy of railroad facilities and practices in connection with the ordering and furnishing of cars and stopping in transit, Mr. Eastman addresses himself briefly to the subject of railroad control of forwarders. He agrees that the New York Central controls Universal and that the Erie, Chesapeake & Ohio and Pere Marquette control National, but he has been unable to bring himself to the conclusion "that such control results in the violations of the law which are found by the majority." "In both cases," he said, "attempts have been made to conceal or disguise the control by the childish humbuggery in which lawyers indulge for the purpose of confusing the courts, but which does not deceive those in practical contact with the situation."

Merchandise Handling Problems*

What the railways can do to bring about recovery of less-than-carload traffic

Busy Freighthouses Mean Increased Revenue to the Railways

THE cost of highway operation is increasing, highway service is less frequent, and there is an opportunity for the railways to secure more of this traffic if they can provide the service required, but they must have service as good as can be secured from the highway operators, who with small units are in a position to cater to those requiring special service.

The service required is that goods be picked up in the late afternoon and that they be delivered to the door of the consignee the next morning, within a distance of 400 miles. It may be necessary to give over-night service for longer distances, as the highways and the trucks improve. Some railroads have already met this need, anticipating such potential highway service. The Illinois Central runs its MS-1 from Chicago to Memphis, 527 miles, in 12 hr. and 15 min.; the Baltimore & Ohio runs trains 117 and 118 between New York and Pittsburgh, 525 miles, in 12 hr. and 45 min. The Overnights of the Southern Pacific between Los Angeles and San Francisco also maintain similar schedules. No truck line can possibly compete, from a service standpoint, with runs such as these, and these railroads are firmly entrenched between the points mentioned against present and future highway competition.

The information received from commercial traffic managers is that unless the railroads can provide the service demanded, they cannot expect to handle the traffic. They explained that orders are received during the day, usually in the morning mail, and goods have to be packed in various parts of the plant and the complete shipment assembled. It is not possible to get many of these shipments ready until the late afternoon. The practice of working with small inventories is here to stay and the demand for fast service will increase.

Shippers were asked if the railroads were providing them with the service they require and in a great many instances the reply was that the railroads were not. In some instances the shippers classified the freight services rendered in the order of efficiency as follows:

1. Highway service.
2. Forwarding companies.
3. Railway service.

A large amount of the merchandise traffic has disappeared from the railway freighthouse. The facilities for handling this traffic are still available, the expense of maintaining them continues, and they should be made to produce net revenue. When handled economically, merchandise can be classed as some of the best paying traffic the railways can secure.

Later Closing Essential

If the demands of the shippers are for late afternoon forwarding, any freighthouse closing at 5 p. m. cannot provide this service. The merchandise, being only available at the shippers' warehouses in the late afternoon, cannot be moved from the shippers' premises to freighthouses by 5 p. m.; to provide the service required, freighthouses should be open later. It certainly cannot all be loaded into cars by 5 p. m.

The Texas & Pacific freighthouse at New Orleans remains open until 6:30 p. m. to receive traffic which is delivered at points as far away as Shreveport, 370 miles, early the following morning. The Baltimore & Ohio accepts shipments for its fast merchandise train at Pittsburgh, Pa., for next morning delivery in New York, 525 miles, as late as 6:30 p. m. In the southeast, where the Railway Express Agency handles a large volume of merchandise under so-called truck competitive rates for the railways, delivery is accepted from the shippers as late as 9:30 p. m. for movement on the night passenger trains. In every case where later freighthouse closing has been combined with fast train service, a satisfactory increase in merchandise traffic has been shown. The highway trucks will pick up shipments at any time, and shippers, faced with this sort of service as compared with the iron-clad freighthouse closing rule of some railroads, will naturally select the mode of transportation that meets their needs. There are difficulties attending late closing of freighthouses, it is true, but they can be met, and must be met if merchandise traffic is to be held.

The collection and delivery organization of the Canadian Pacific and the Canadian National has been developed to the extent that orders for picking up shipments are accepted by truck dispatchers as late as 6 p. m., for goods to be delivered early next morning for points within a radius of 380 miles from Montreal and Toronto, with the result that a large percentage of the traffic has been regained from the highway operators.

In some freighthouses the shut-off hour for the faster trains is 4 p. m., and in one case, where a fast mer-

* From a report presented at the convention of the American Association of Railroad Superintendents by a committee of which E. G. O'Brien, assistant to general superintendent of transportation, Canadian Pacific, was chairman.

chandise train is operated, the collection truck service will not accept freight after 2:45 p. m. At a number of freighthouses the better practice prevails of keeping the freighthouse open to 6 p. m. or 7 p. m., and, where necessary the loading continues as late as 8 p. m. It is absolutely necessary, if the railroads are to secure an increase in merchandise traffic that all freight accepted be forwarded the same night. The practice of keeping it over on the freighthouse floor is responsible for much of the dissatisfaction with railway merchandise service.

Starting with the movement of the freight, it is suggested that, where not already done, pick-up service should be made by a truck which will take the goods from shippers' warehouses directly to the railway forwarding platform, and the elimination of sub-stations is imperative. Re-handling at substations or universal stations is responsible for a large part of the delay to l. c. l freight.

Small truck units should be used, as the trailer, with its large number of shipments, takes too much time in loading. It arrives at freighthouses late and requires considerable time to unload, so that its use results in congestion and increased cost. It may be economical in-so-far as the trucking contractor is concerned, but it increases the cost at the freighthouse to such an extent that the ultimate cost is greater with a large tractor trailer than it is with the small trucks of 1½ to 2½ tons capacity equipped for unloading over the side of the truck. Some roads have the collection and delivery contractor distribute from these small trucks along the freighthouse and this greatly reduces the cost in the freighthouse, as it eliminates long hand-truck hauls. Reducing the hand trucking to movement across the freighthouse greatly expedites the handling. Agreements between the railways that each will deal with one trucker only in each town would simplify cartage operations and eliminate many of the difficulties now encountered.

Work at the freighthouse can be greatly reduced if the collection and delivery service is railway owned, as it should be quite feasible to eliminate checking. Assuming the truck is driven by a railway employee, there would not be much object in checking from one railroad employee to another, and experiments in reducing the detail work and consequent delay have proved the possibilities of doing this extensively.

The time required for assembling cars into trains is governed by local conditions, but there is room for much faster handling by careful pre-arrangement for spotting cars at the freighthouse in train order, and to do this successfully all the yardmasters handling the cars in the terminals should be asked to be present with the agent, the shed foreman and the supervisor of merchandise service when the shed plan is arranged.

The time of arrival at destination at the larger stations should not be later than 5 a. m., and at smaller stations, 7 a. m., as time is required for getting the cars to the freighthouse, and, owing to the time required for unloading the cars, with trains arriving in the late morning a large number of box cars cannot be unloaded and freight delivered to trucks the same morning. As the freighthouse staff should concentrate on delivery to trucks from 7 a. m., to 9:30 a. m., freight trains arriving at a terminal at 7 a. m. do not permit morning delivery of the freight. A 9 a. m. arrival means afternoon delivery, at which time of the day consignees do not want to receive freight. Hours of freighthouse staffs must be varied to suit local conditions, but with the service the public demands there is a peak load of work in the freighthouse in the morning and evening. To provide a staff in the early morning and late evening it is the usual practice to stagger the hours. This provides the double, or maximum, staff in the middle of the day when there is a minimum of work. The best arrangement is to have short haul cars placed about midnight, and to work the unloading staff from midnight to 3 a. m. and finishing from 9 a. m. to noon, and the outbound staff from noon to 8 p. m. or 9 p. m., with extra men from 4 p. m. to 8 p. m. This provides a minimum staff in the middle of the day, when there is usually only the tranship freight to handle.

A study of methods of billing indicates that mani-billing has some advantages over present forms of billing, but it must be remembered that where freight is loaded up to near the departure time of trains the billing cannot be made ready for the trains. It is inadvisable to delay the departure of a train until the billing is ready as every minute that can be saved helps the situation at destination, and the use of the telephone or teletype is advisable. Use of the telephone has proved successful and inexpensive. Zone billing stations, or the handling of all billing and accounting at one designated point for a number of adjacent stations, will be found both economical and expeditious. This arrangement leaves only the record of receipt and delivery of the freight and the physical handling for the station which is not a zone accounting station.

Highway operations by the railways are increasing and in some territories the railways have a system of loading box cars to and from concentration points and then handling them on the highway direct to consignees at intermediate towns. Where there is a small volume of traffic, this is the only way to meet the demand for service or to compete with the service offered by highway operators. Where the traffic amounts to a considerable volume, transfer to a local light delivery truck from a heavy highway truck may be advisable.

The economical use of facilities and reductions in car mileage, yard and train costs can be effected by loading to transfers for transhipment during the night instead of operating direct cars. As an example, on one road merchandise arriving at the freighthouse on trucks up to 6:20 p. m. is loaded into box cars, hauled 132 miles and placed for transhipping at 11 p. m., with local trains leaving at 3 a. m. This permits handling in 2 cars what had formerly been handled in 12 direct cars to points on branch lines. As merchandise was moving into this territory from six directions, the same method at each point permitted loading into 8 cars what formerly went into 30 cars. The cars leave the transfer point about 3 a. m., with one car for each larger town on the run, instead of having five or six way-freight cars on each train.

Sufficient stevedores should be employed at freighthouses to load cars to their full cubical capacity, for the better storage reduces damage and claims. With sufficient stevedores it is possible to load 17 tons of general merchandise in a car. There is no greater opportunity to reduce railway cost than by heavier loading, even if it increases platform cost of handling tonnage. Irregular cars with partial loads are not economical. The pool cars operators, the steamships and the truckers can stow freight to use equipment economically and there is no reason why the railroads cannot do so.

One of the railway regulations which prevents giving satisfactory service and greatly increases cost at the freighthouse is the allowance in lieu of cartage. It is wrong in principle in that the short haul customer largely takes advantage of it, which makes a longer average haul for the balance of the traffic, and thus increases the cost; but it is objectionable principally because it makes it impossible to organize either expeditious or economical handling in the freighthouse. Experience where such an

allowance is not made has amply demonstrated the advantages which can be secured from elimination of this provision from the tariffs.

There are a number of evils which have developed from the allowance in lieu of cartage. Some shippers and receivers are forced to use their own contractor owing to the inefficiency of the collection and delivery service. Industrial ferry cars are expensive to handle both in yards and at freighthouses and a study should be made of substitute methods of handling. The 45 cent minimum is too high for short haul traffic and enables the highway operator to secure sufficient traffic to continue operations which would otherwise not be profitable.

Discussion

F. Cizek (D. L. & W.) reported that his railroad had obtained better results by hiring a number of truckers at Binghamton and Syracuse for pick-up and delivery than by using only one drayage company, and there were no complaints from shippers as to congestion of trucks at their platforms. J. J. Dowling (R. E. A.) stated that, in larger cities, most railroads had found one trucking company more satisfactory and H. E. Bixler (N. Y. N. H. & H.) said that even in smaller towns the use of one agency eliminated freighthouse congestion during busy periods. J. C. Emery (R. E. A.) explained the services of his company at Denver in considerable detail and also a resume of the good results obtained by the express agency's truck competitive rates in the southeast. In response to questions from P. M. Shoemaker (N. Y. N. H. & H.), Mr. Emery stated that the truck competitive rates in the southeast had resulted in much added traffic and few additional train miles. In response to an inquiry from E. J. Stubbs (Erie) as to l. c. l. containers for perishables, R. J. McDermott (Mo. Pac.) stated that several of them were in use on his line and Mr. Dowling stated that in his use of them he found their refrigeration qualities excellent. Mr. Bixler described the trucking operations of the Canadian Pacific Express Company at Montreal.

I. C. C. Would Wipe Out C. & E. I. Common

(*Continued from page 741*)

organized company. The trustee's certificates, totaling $171,000, will be paid in full in cash, including unpaid interest thereon to the date of payment. All claims entitled to priority over existing mortgages, if any, which are proved and allowed by the court, will be paid in full in cash without interest within 120 days after the consummation of the plan.

Evansville Belt bonds, totaling $142,000, will be assumed by the reorganized company, but each holder may, at his option, within 60 days after the consummation of the plan, surrender his bonds and receive cash to the amount of the principal and the unpaid interest thereon to the date of the payment.

These cash payments will be made within 120 days after consummation of the plan, and the surrendered bonds will be canceled.

The first consolidated mortgage bonds, with $2,736,000 outstanding, will be paid in cash, including unpaid interest thereon at the rate of four per cent per year from October 1, 1934, to the date of payment. Payments will be made to the trustee under the first consolidated mortgage within 60 days after the consummation of the plan and the funds so paid will be distributed by the trustee upon surrender of the bonds, which will be canceled.

Railroad Credit to Get Cash

The indebtedness to the Railroad Credit Corporation of $1,745,450 will be paid in cash, including unpaid interest to the date of payment. The final plan provides for the payment to be made within 60 days after its consummation.

The commission's plan provides that the indebtedness to the Reconstruction Finance Corporation shall be satisfied by the issue of new prior-lien bonds, series A, of a face amount equal to the principal amount of the indebtedness, $5,760,868 of six per cent notes. Interest on the indebtedness after April 18, 1933, will be computed on the following rates: From April 19, 1933, to June 30, 1933, inclusive, at 5½ per cent per annum; from July 1, 1933, to October 31, 1933, inclusive, at five per cent per annum; and from November 1, 1933, to December 31, 1936, inclusive, at four per cent per annum. To the extent that the amount of interest so computed exceeds the amount of interest heretofore paid on the indebtedness, it will be paid by the issue of new prior-lien bonds, series A, of a face amount equal to the amount of interest to be paid. Only $1,000 bonds will be issued, and any fractional part of $1,000 will be paid in cash. The bonds will draw interest from January 1, 1937, the effective date of the plan.

Series A bonds will also be issued to the RFC, if it will accept them, in payment of any actual and reasonable expenses incurred by it during the reorganization proceedings, in the amount allowed by the court and approved by the commission.

All securities pledged as collateral for loans to the Railroad Credit Corporation and the Reconstruction Finance Corporation will be surrendered and the old prior-lien bonds so pledged will be canceled.

Treatment of General Mortgage Holders

All claims of the general mortgage bondholders on account of principal and interest on the general mortgage bonds will be satisfied by: (a) Paying the odd $36 in cash without interest; (b) by exchanging the remaining principal amount of $30,709,000 for 50 per cent in new income mortgage bonds and 50 per cent in new preferred stock; and (c) by issuing for the unpaid interest on each $1,000 bond four shares of new no par common stock.

The plan provides that the claims of the holders of the old preferred stock, including claims for cumulations of dividends, shall be satisfied by the issue of one share of new no par common stock for each share of the old preferred stock, such common stock to be issued to each holder of old preferred stock within 60 days after delivery by the holder to the reorganized company of the share certificates evidencing his ownership.

All contracts made by the trustee in pursuance of his duties as trustee, or made by the debtor and not disaffirmed by the trustee, will be assumed by the new company, except that obligations, if any, now the subject of litigation will be assumed by the new company only to the extent that a claim is finally established. Obligations of other companies, guaranteed by the debtor, will be assumed, as will other claims, liabilities, or obligations not otherwise provided for and recognized as valid by the court.

Current operating expenses authorized by the court,

and the expenses of reorganization allowed as provided in section 77 of the Bankruptcy Act, will be paid in full in cash.

New Prior-Lien Bonds to Be Issued

New prior-lien bonds dated January 1, 1937, to mature January 1, 1967, and bearing interest at the rate of four per cent per annum, will be issued by the reorganized company. The commission stipulated that the authorized amount of the bonds should be $20,000,000, of which there will be immediately issued not in excess of $11,159,000 plus bonds necessary to refund the Evansville Belt bonds, plus bonds that may be issued to the RFC in payment of any actual and reasonable expenses including reasonable attorneys fees.

For the series A bonds and any bonds issued to refund these bonds the plan provides for a sinking fund of $75,000 for each of the calendar years 1937 to 1946 inclusive, and $110,000 a year for each of the years 1947 to 1966, inclusive.

The plan also contemplates the issuance of $15,354,500 of income bonds, dated January 1, 1937, and maturing January 1, 1997. The income bonds will bear interest at the rate of five per cent, payable only to the extent that income is available for the purpose, and deficiencies in interest from lack of income will not cumulate. The bonds also have a provision that at any time prior to maturity each holder may, at his option, convert the bonds held by him into new common stock on the basis of one share of stock for each $25 face amount of bonds; only whole bonds to be converted.

The mortgage securing the income bonds will contain a provision for a sinking fund of $75,000 for each of the calendar years 1937 to 1946, inclusive, $40,000 a year for each of the years 1947 to 1966, inclusive, and $150,000 a year for each of the years 1967 to 1996, inclusive, but the latter amount is to be reduced to an amount not less than $40,000 a year, if it is found to be necessary to provide a sinking fund for any bonds issued to refund new prior-lien bonds, series A, the sinking fund on which would not exceed $110,000 a year. The sinking fund appropriations are to be made only to the extent that income is available for that purpose in each year, and they shall be used within one year for the purchase or redemption of income bonds, which will be canceled.

Preferred Is Cumulative If Earned

Preferred stock, having a par value of $40 a share, will be authorized to the amount of 383,862½ shares. The stock will be entitled to a preferred dividend of $2 a share, payable before payment of dividends on common stock in any year. To the extent that income is available for dividends, unpaid dividends for any year will cumulate, but not otherwise. This stock will be entitled to a preference against assets of $40 a share plus a sum equal to the amount of all accumulated and unpaid dividends.

Common stock of no par value will be issued in the number of shares necessary to carry out the provisions of the plan, which relate to the issue of common stock of the reorganized company to holders of general mortgage bonds and old preferred stock; plus the total number of shares necessary to provide for conversion of the income bonds. The stock will have the right of cumulative voting in the election of directors.

The final plan also provides that the reorganized company shall have a board of directors consisting of 13 members. The term of each director would be one year. The initial board would be chosen as follows: Kenneth D. Steere, representing the debtor, would name five members; Carrol M. Shanks, representing the bondholders, would name five; and the RFC would nominate three. Provision is also made that so long as the RFC holds not less than $1,000,000 of the new prior-lien bonds, series A, the selection of three members of each succeeding board of directors shall be subject to its approval. In the event that the financing through the RFC is not consummated, and the new prior-lien bonds are sold to other parties, the new owners of a majority of such bonds will have the privilege of naming three members of the initial board of directors.

Mahaffie Voices Objections

Besides making the plan effective January 1, 1939, and reducing the capitalization by at least $5,000,000, Commissioner Mahaffie would make the payment of interest on the new prior-lien bonds contingent on earnings for a period of two years, such interest to be cumulative and to be paid or provided for in full before any accrual or payment of interest on income bonds or other junior securities.

Commissioner Mahaffie went on to say that "The fact that this might require an increase in the proportion of the securities allocated to the present bondholders, and some reduction in the proportion available for the preferred stock interest, does not, in my view, offset the desirability of providing initially a sound financial position for the new company. To the extent the holders of the preferred stock, on account of this, should be compensated I would authorize the issuance of five-year warrants to purchase common stock at, say, $25 per share, the proceeds of such purchases to be used by the company in retiring its indebtedness. By this means the present preferred stockholders would be in a position to share in any future prosperity of the company without their recognition resulting in an increase in the aggregate capitalization."

Would Give No Preference to C. & O.

During the hearings on the debtor's modified plan which had been agreed upon by the debtor and the bondholders, the debtor urged the desirability of continuing the interest which the Chesapeake & Ohio through its wholly-owned subsidiary, Virginia Transportation Company, held in the C. & E. I., pointing out many benefits which had been and would continue to be derived from that association. On this subject, the commission remarked that "There are no facts of record which warrant allotment to the C. & O., as a stockholder of the debtor, any better treatment in exchange for its holdings than would be given to any other stockholder."

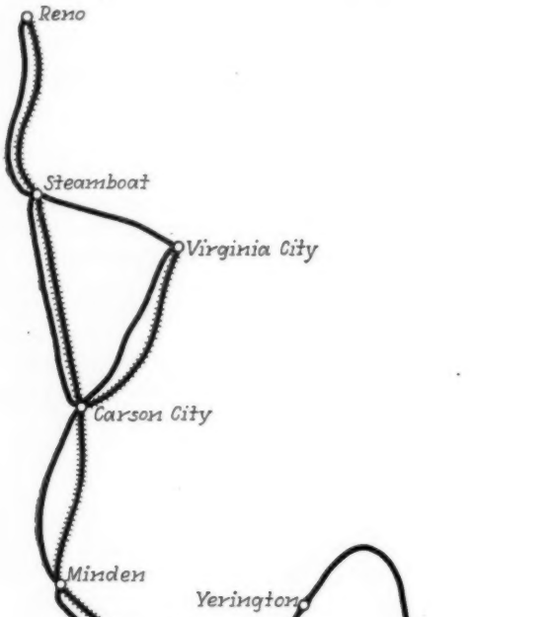
Under the "agreed" plan, the Mid-America group, now in control of the former Van Sweringen "empire," would own 16.6 per cent of the common stock and 19.1 per cent of the voting control due to their interest in both the new common and the new preferred stock. Under the commission's final plan, this group will now own 19,000 shares of preferred stock and 70,984 shares of common, giving them only 12.4 per cent of the voting power.

By its action in this case, it would appear that the commission feels the mere fact that the C. & E. I. had agreed upon a plan with its creditors does not warrant its adoption by the commission. Instead of accepting the "agreed" plan, Division 4 virtually wrote its own plan of reorganization for the road. If this position continues to prevail, it would seem that all efforts of other debtors to reach an agreement with their creditors to speed up reorganizations would be for nought.

Serving Western Nevada

THE Virginia & Truckee, with a total railway mileage of 62 miles, has built up a subsidiary motor coach operation of 627 route miles daily. This railway, which formerly operated a considerable passenger service between Reno, Nevada's largest city, Carson City, the state capital, and the mining centers of Virginia City, Minden and Gardnerville, suffered materially from highway competition after hard roads were built in this mountainous territory. A rail-motor and a mixed train still make a round trip daily via the railway line between Reno and Carson City, also between Carson City and Minden. However, as indicated on the accompanying map, the bus schedules supply the major portion of the passenger service.

Buses were first operated between Reno and Carson City, 31 miles. This service now includes four buses



The V. & T. Stage Lines Have Been Extended Beyond the Railroad

northbound and three southbound. Then a bus route was established between Carson City and Virginia City, 21 miles, along the railway's branch line, with one round trip daily. Following the completion of a direct highway between Reno and Virginia City, 28 miles, over the spectacular Geiger grade, a daily round trip was established between these two points. Then the line between Carson City and Gardnerville, 16 miles, was paralleled by a bus route, providing three schedules northbound and two southbound. One of these bus schedules has since been extended from the railhead at Gardnerville to Hawthorne, via Yerington, 116 miles, on the basis of a daily round trip. Despite the mountainous territory traversed, and the severe winter weather, by applying the principles of railway safety to its bus operations, the Virginia & Truckee has established an excellent safety record on its highway subsidiary.

Communications . . .

Automobile Design at Fault

HOLLYWOOD, CAL.

TO THE EDITOR:

Grade crossing safety is not entirely the responsibility of the railroads. Automobile accidents at grade crossings are largely the fault of the automobile designers. There is no reason why automobile hoods and radiator grilles could not be built much lower.. The hoods contain a lot of empty space over the engine.

The glass windshield is far too small for adequate vision. The enormous posts at each side of the window where it joins the front doors of the automobile, cut off a very important visual angle when approaching a grade crossing. In the *Railway Age* I note the enlarged windows in the cab of the new Milwaukee locomotives. This is an example of what could be done in automobile design.

The average seat in an automobile is far too low in reference to the front window. Maybe the present arrangement is satisfactory for persons six feet tall. But for most drivers, especially women drivers, a periscope to see ahead becomes almost a necessity. It is dangerous to have to sit on the edge of the seat, straining to see over high radiators and other obstructions.

When a railroad grade crossing accident is being investigated, the man responsible for these fantastic high-hood, little-window, low-seat automobile designs should share the responsibility with the railroad. If this automobile designer is not the criminal, he at least is an accessory. What good is a railroad warning signal, if the motorist is so boxed in that he cannot see it?

NAOMI ROBERTS.

Coal Industry Sells Self To Oncoming Generation

WILKES-BARRE, PA.

TO THE EDITOR:

A student of a Wilkes-Barre high school, and a future graduate, I understand that you, as an influential character in your community will probably aid in solving the employment problem of the future graduates of your high schools. For that reason I offer a suggestion for your approval.

My idea is that if you would aid us by boosting anthracite in your magazine, we could return your favor by increasing our buying of products from your city.

Statistics show that the majority of salesmen visiting this city for business purposes, come from New York City. Northeastern Pennsylvania is a good business district because her annual production of anthracite is worth more than all the nation's annual production of gold, silver, lead and aluminum added together. More than six million homes are heated with anthracite, and there are nine thousand retail coal dealers, who sell anthracite. We use nearly one million railway cars, each year, to transport our coal. The total retail sales of anthracite amounts to nearly $425,000,000 a year, which means that these people are going to buy other commodities.

The money spent for outside products means more employment for other towns. There will be a lot of shipping necessary and you could increase the use of your railroads by informing people that Pennsylvania is not only a good business district but also one of the most beautiful sections in the U. S.

I trust that you will give this letter consideration and will find it possible to advance the anthracite business, and thereby solve part of your future employment problem.

(MISS) OLGA KEPCHENE.

NEWS

A. A. R. Reports List Big Research Jobs

Constituent groups carrying on with studies aimed at improved service

Large-scale research aimed at greater safety, improved service and increased efficiency and economy in railway operation featured annual reports of the Association of American Railroads, made public on November 12. This research, much of which is carried on jointly by the railroads and the manufacturers of railway equipment, ranges from study of the behavior of track under heavy rolling loads to such things as the testing of containers in which merchandise is shipped, the reports showed.

Among the more important projects is that dealing with steel rails, the Association's Operations and Maintenance Department pointed out. Investigation and detection of rail defects, better ways of rolling and treating rails, improvement in design and construction of rail joints and testing the strength and reliability of continuous welding of rails are engaging the attention of the Engineering Division. This division is also obtaining basic information about stresses in railroad track.

The causes and prevention of the cracking of boiler shells are being determined by the Association under a cooperative agreement with the United States Bureau of Mines, a report stated. Methods are being sought to prevent corrosion of track and equipment from brine drippings from refrigerator cars. Comprehensive research is being conducted by the Signal Section to enhance safety and expedition in handling railway traffic.

Experiments are being made on axles, couplers, draft gears, wheels, power brakes and other parts of cars and locomotives by the Association's Mechanical Division, it was said.

A special committee is working on the further development of the reciprocating steam locomotive. Its report, to be made after exhaustive tests, will assist the railroads on new designs of locomotives for the future and on the modernization of present types. To permit the operation of locomotives at higher speeds, as well as to reduce the stresses in the track, the counterbalancing of existing locomotives is being studied by the Association's mechanical engineer in cooperation with the Committee on Locomotive Construction and a number of the member roads, the reports declared.

During the past year, a statement covering the performance of various air filters on railroad passenger cars was prepared. These filters purify the air and keep the cars cleaner and more healthful. Temperature and humidity control are among the subjects now being studied in connection with air-conditioning.

An inclined impact testing device which simulates stresses and strains received by a shipment in handling and in transit is being used by the Freight Container Bureau to measure the protective value of containers. Development and introduction of better and cheaper ways of packing and loading various kinds of general merchandise and perishables, ranging from mirrors to watermelons, was also reported by that bureau.

Heck!—Ashburn Quits Army, But Holds on to Barge Job

Major General Thomas Q. Ashburn, who will retire from active military service on November 30, has been designated by the Secretary of War to continue as chairman and president of the government-owned Inland Waterways Corporation. Under the Inland Waterways Corporation Act, the Secretary of War may appoint as chairman of the Federal Barge Line's board "either a civilian or an officer from the Military Establishment of the United States."

The War Department order covering Major General Ashburn's retirement from the Army was dated November 8. It revealed that he attained the age of 64 years on November 17, and went on to say that on November 30 he would be "relieved from his present assignment and duty in Washington, D. C." This language was eliminated in an order issued November 14, superseding that of November 8.

Court to Hear Stoker Appeal on September 26

The railroad appeal from the Interstate Commerce Commission's order in the automatic stoker case will be heard on November 26 in the United States District Court at Cleveland, Ohio, before a three-judge court composed of Judges Florence E. Allen, Charles C. Simons and F. L. Kloeb. As noted in the *Railway Age* of November 12, the commission last week further postponed the effective date of this order from November 15 to December 15.

Wants Six Region Merger for Roads

Engineer outlines merits of merging lines into six regional groups

A plan for consolidation of American railroads into six regional systems has recently been issued as a printed pamphlet by L. Alfred Jenny, consulting engineer, of New York. According to the plan, the carriers would be grouped into a north eastern, central eastern, south eastern, north western, central western, and south western system, respectively, referred to as systems I to VI. All traffic within the territory assigned to each system would be handled by that system, but Mr. Jenny would provide for competition between larger points, such as between Chicago and New York, by the provision of certain "bridge lines" reaching from one system into another.

It is the author's belief that the establishment of these large systems would assure financial stability to each. He estimates savings in operation resulting from the abandonment of excess track, pooling of equipment and consolidation of terminal operations of between 215 and 750 million dollars annually, based on depression period traffic volume. Making hypothetical groupings of existing carriers into his proposed six systems, the author points out that, based on carrier reports to the I. C. C. for 1936, fixed charges in each system would have been earned for the six systems together a total of 1.3 times; all but system number VI would have earned all of their fixed charges in 1936 while system VI would have earned all but 5 per cent of its interest requirements.

Major Jenny rejects the idea of voluntary consolidation on the grounds that (1) There is too much divided authority; (2) strong carriers are unwilling to consolidate with weak ones; (3) railroad executives, fearful of their positions, belittle effective consolidation; (4) present laws are inadequate; (5) there exists no financial plan or body to enforce the plan. He therefore, urges that a consolidation plan be effected by the national legislature and that a bill be introduced creating either a transportation or railroad "Authority," stating the policy to be followed in consolidations and setting definite time limits within which the consolidation is to be accomplished. Remaining details as to procedure and adjustment, he suggests, should be left to the Authority itself.

The second step, according to the author,

is the preparation of a tentative plan by the railroad Authority. This it would submit to the railroads, who would be given six months or a year to offer modifications. The carriers allocated to each system would appoint a system board of managers which would be given the duty of co-operating with the Authority and effecting the actual consolidation of the territories in its control. The author does not insist upon any one plan of allocating securities of the new systems to each carrier and suggests that weight might be given to valuation, average earnings for the last five years, and average earnings contributions of each road as a part of the system for the first five years of experimental consolidation.

At the end of the one year period the Authority would issue a general plan and direct the boards of managers to operate the railroads in consolidated systems for a trial period of five years and to inaugurate a ten-year plan of abandonment of unprofitable lines, unifications of terminals, etc. The five year trial period the author suggests for the purpose of permitting desirable modifications in the consolidation plan, after which the Authority would prepare and effect its final plan of consolidation. All matters of valuation, regulation, rates and finance, the author would leave in the hands of the Interstate Commerce Commission.

The author's plan of consolidation contemplates the division of the country into two sections—namely, east of the Mississippi (with the exception of Wisconsin) and the territory west of that boundary. Each half would again be divided horizontally into thirds—north, central and south. According to a table appearing at the end of the book the average mileage of each system would be 42,030, including all classes of carriers.

The ten principal Class I railroads which he would assign to each of the six systems are as follows:

System I—North Eastern—N. Y. C.; I. C.; Wabash; Pere Marquette; Erie; B. & M.; Nickel Plate; Maine Central; D. L. & W.; and Alton.

System II—Central Eastern—P. R. R.; B. & O.; L. & N.; C. & O.; Reading; N. H.; L. V.; W. M.; Virginian; L. I.

System III—South Eastern—Southern, N. & W.; A. C. L.; S. A. L.; C. of G.; F. E. C.; Y. & M. V.; M. & O.; N. C. & St. L.; G. M. & N.

System IV—North Western—C. M. St. P. & P.; C. & N. W.; G. N., N. P.; C. St. P. M. & O.; M. & St. L.; C. G. W.; S. P. & S.; D. M. & N.; Green Bay & W.

System V—Central Western—A. T. & S. F.; U. P.; C. B. & Q., C. R. I. & P.; D. & R. G. W.; W. P.; C. & S.; F. W. & D.; C. R. I. & G.; N. W. P.

System VI—South Western—S. P.; M. P.; St. L.-S. F.; T. & N. O.; M-K-T.; S. L. & S. W.; K. C. S.; L. & A.; M. & A.; Midland Valley.

November Safety Poster Stresses Longevity

Addressed to a young man, the November safety poster of the Safety Section, A. A. R., contains a large photograph of a group of 50-year service veterans of an unnamed railroad, under which is carried the caption "Take note of these. Each man here worked for the same railroad more than fifty years. Some have retired; others are still at work—They Were Safe Men."

Railroad Retirement Account

The Daily Statement of the United States Treasury for November 10 shows that up to October 31, the pension taxes on carriers and their employees had aggregated $177,261,115, while administrative expenses of the Railroad Retirement Board had totaled $5,348,653 under the Railroad Retirement Act and $31,435 under the Railroad Unemployment Insurance Act. Benefit payments under the Retirement Act totaled $113,654,641.

Canada's Highway and Waterway Subsidies Dwarf C. N. R. Deficit

Critics of Canada's railway policies hit out at the deficits incurred by the government-owned Canadian National Railways, but they do not seem to worry one bit at the much greater sums of tax money used to subsidize highway and waterway transportation. Such was the burden of a speech delivered by Canada's Transport Minister Howe at Toronto last week.

"We in Canada are too willing," he said, "to dwell on the cost to the taxpayer of railway transportation and too anxious to forget the cost to the taxpayer of competing forms of transportation.

"The Bureau of Statistics has published figures indicating that for eight years, 1929-1936 inclusive, Canada spent in an average year on its highways for construction $48,600,000, for maintenance $21,500,000 and for interest on highway bonds $20,300,000 or a total average expenditure of $90,400,000. In the same period gasoline taxes brought in $26,600,000 and motor license fees about $12,000,000, leaving an annual excess of expenditure over income from highways of $51,800,000.

"The annual call on the taxpayer for railway purposes should not exceed that amount. The cost of our canals is part of the public debt of Canada but their interest charges and operating cost constitute a subsidy of around $20,000,000 per annum to water transportation, to which must be added a large sum for aids to navigation, public docks and government dredging."

Club Meeting

The next regular meeting of the Toronto Railway Club will be held on November 21 at the Royal York hotel, Toronto, Ont., at 7:45 p.m. R. M. Smith, deputy minister of highways of the province of Ontario, will speak on "Impressions of a Recent Trip to Europe." A musical program has also been arranged. For the convenience of those desiring it, a dinner will be served prior to the meeting.

Mechanical Division Convention

The General Committee of the Mechanical Division, A. A. R., at a meeting in New York on Wednesday, November 16, decided to hold a three-day convention in New York next year. The exact dates will depend upon arrangements which can be made for convention facilities, but the meeting will probably be held late in June. The transportation exhibits at the World's Fair will take the place of the exhibit which is ordinarily associated with conventions of this organization.

I. C. C. Orders Anthracite Increase in Pennsylvania

The Interstate Commerce Commission has found that rates on anthracite coal, in carloads, between points in Pennsylvania are unduly prejudicial and has prescribed rates and bases of rates to remove the undue prejudice and unjust discrimination. The case arose when the Pennsylvania Public Utilities Commission refused to allow anthracite roads to put into effect intrastate rates equal to the interstate rates prescribed by the commission in Ex Parte 123.

In a decision written by Commissioner McManamy, the commission said that if the Pennsylvania Public Utility Commission does not permit the increases asked by the carriers by December 15, it will issue a formal order requiring it to do so. Commissioner Caskie did not participate in the decision.

Elections Create Vacancies on Congressional Committees

Last week's elections produced three vacancies on the Senate committee on interstate commerce and nine on the House of Representatives committee on interstate and foreign commerce. The chairmanships remain unchanged, as Senator Wheeler of Montana was not involved in the elections while Congressman Lea, Democrat, of California was re-elected, having received the Republican as well as the Democratic nomination.

The three vacancies on the Senate committee are the places held by Senator Dieterich of Illinois, who did not seek re-election, and Senators Lonergan of Connecticut and Brown of New Hampshire, who were defeated. All three are Democrats. Of the House committee members, Representatives Pettengill of Indiana and Eicher of Iowa did not seek re-election, while six other Democratic members, who will not return to Congress, are: Sadowski of Michigan, O'Brien of Illinois, O'Connell of Montana, Kelly of New York, Quinn of Pennsylvania, and O'Neill of New Jersey. Also, Representative Withrow, Progressive, of Wisconsin, was defeated.

B. & M. Collision at Charlemont, Mass.

A Boston & Maine westbound freight train and an eastbound local passenger train collided about one mile east of Charlemont, Mass., on the main line, on November 7, causing the death of the fireman of the passenger train. None of the 12 passengers on board the local required medical treatment. A brakeman riding on one of the locomotives involved sustained a bump on the head, but all other members of the train crews escaped injury.

The freight train was proceeding west to Mechanicville, N. Y., at a speed of about 15 m.p.h., while the passenger local, en

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METHODS AND MACHINERY THAT GUARD LIMA QUALITY

TIGHT TANKS

Men with railroad training manage Lima. They know the nuisance of a leaky tank.

Therefore extra precautions are taken in the Lima tank shop to make tanks tight.

Laying out, cutting, drilling, punching, forming, riveting and welding of plates for tanks have close supervision. Liberal use of templates assists in maintaining accuracy.

LIMA LOCOMOTIVE WORKS — LIMA LOCOMOTIVE WORKS INCORPORATED — INCORPORATED, LIMA, OHIO

route to Boston, Mass., was moving at about 8 m.p.h., after having made a stop at a crossover switch. The collision occurred on a curve about 800 yards from the crossover. Both locomotives were considerably damaged but remained on the rails, except that the forward pony truck of the passenger engine was put on the ground, and three of the 76 cars of the freight train were derailed. Although both tracks at this point are open for operation, the trains met head on, on the eastbound track. The cause of the collision is under investigation.

Terminal Services of Central Vermont

Examiner Lacy W. Hinely of the Bureau of Motor Carriers' Section of Finance has recommended in a proposed report that the Interstate Commerce Commission approve the transfer of truck operating rights held by the Central Vermont Transportation Company to Central Vermont Terminal, Inc., for the nominal consideration of $1. The declared purpose of the application is to effect unification of all Central Vermont terminal operations in the applicant while the Transportation Company continues as the medium through which the railroad's freight is handled by water between New York and New London, Conn.

In the latter connection the proposal is another step in readjustments which followed the United States Supreme Court's decision in Central Vermont Transportation Company vs. Durning wherein, as reported in the *Railway Age* of January 19, 1935, page 92, it was held that since the Central Vermont was owned by the Canadian National the rail-water route as set up at that time was in violation of the Merchant Marine Act's provision prohibiting the transportation of merchandise by water or by rail and water between points in the United States in any vessel other than one owned by persons who are citizens of the United States. It was after this ruling, as the examiner points out, that the Central Vermont sold its controlling stock interest in Central Vermont Transportation Company to the New London Northern, one of the C. V. lessor companies. This shift has occasioned "certain duplications as well as confusion to the public" which the present application is designed to eliminate.

P. R. R.'s Beneficial Group Issues 25th Anniversary Issue

The Mutual Beneficial Association of Pennsylvania Railroad Employees, Inc., publisher of the "Mutual Magazine," has issued a special 112-page issue of that publication in commemoration of the 25th general assembly of the association held recently in Philadelphia, Pa. The leading editorial points out that the M. B. A. is a fraternal insurance association composed of P. R. R. employees and their wives and children offering insurance certificates up to $5,000 in various classes. It is chartered and operates under state license and has formed over 85 local assemblies on its system.

In addition to its insurance activities the association holds regular monthly meetings, organizes social events, sponsors thrift plans, and publishes the monthly magazine. The M. B. A. was organized in 1913 and its first local assembly installed in 1914 at Reading, Pa. In 1937 the organization collected $216,754 in insurance dues and received for investments a total of $109,410. The association plans to place new insurance plans in effect on January 1, 1939, including a new retirement income at age 65 plan and a juvenile insurance department.

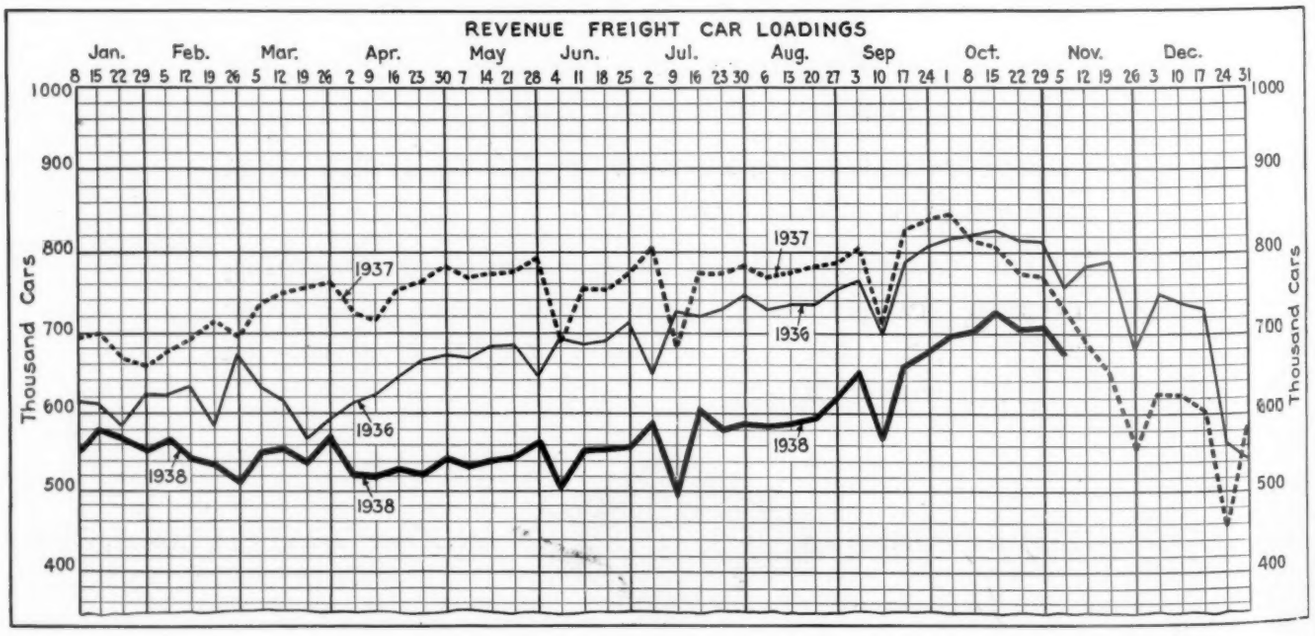
Transportation Association Elects Directors

Sixteen directors were elected at the annual meeting of the Transportation Association of America at Chicago on November 10 to fill three-year vacancies on the Board. These include Benjamin F. Affleck, retired president of the Universal Atlas Cement Company, Chicago, Ill.; F. R. Bigelow, president of the St. Paul Fire & Marine Insurance Co., St. Paul, Minn.; L. R. Clausen, president of the J. I. Case Company, Racine, Wis.; J. T. Fleishel, president of the Fleishel Lumber Company, St. Louis, Mo.; Glenn Frank, publisher of "Rural Progress," Chicago; W. J. Hammond, vice-president of the Inland Steel Corp., Chicago; C. C. Hine, vice-president of the Globe Grain & Milling Co., Los Angeles, Cal.; R. C. Hobbs, president of the Hobbs-Western Company, St. Louis, Mo.; R. C. Ingersoll, vice-president of the Borg-Warner Corp., Chicago; J. L. Keeshin, chairman of the Keeshin Transcontinental Freight Lines, Inc., Chicago; Fred I. Kent, director of the Bankers Trust Company, New York; J. L. Madden, vice-president of the Metropolitan Life Insurance Company, New York; Howard C. Mull, vice-president of the Warren Tool Company, Warren, Ohio; G. H. Ostermann, director of traffic of the Timken-Detroit Axle Company, Detroit, Mich.; G. E. Scott, president of the American Steel Foundries, Chicago; and Paul Shoup, president of Southern Californians, Inc., Los Angeles, Cal.

The directors notified President Roosevelt's "Committee of Six" composed of representatives of railway management and labor, that all of the Association's research material and its recommendations looking to a sound national transportation policy, were available to the Committee in furtherance of its efforts to develop constructive legislation at the next session of congress.

Freight Car Loading

Loading of revenue freight for the week ended November 5, totaled 673,333 cars, a decrease of 35,507 cars or five per cent below the preceding week a decrease of 55,432 cars or 7.6 per cent below the corresponding week in 1937 and a decrease of 261,382 cars or 28 per cent below the same week in 1930. All commodity classifications except coke showed decreases under the preceding week, while all commodity classifications except livestock and ore



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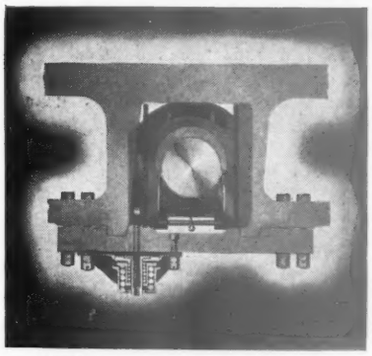
A DRIVING BOX *takes a pounding too*

Locomotive driving boxes can "Take It", but the incessant pounding that results from an improperly adjusted wedge will soon have the locomotive in the shop for repairs . . . reduce such repairs by eliminating the cause with the application of Franklin Automatic Compensators and Snubbers.



Franklin Automatic Compensator and Snubber.

Repair Parts made by the jigs and fixtures that produced the original are your best guarantee of satisfactory performance.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

showed decreases under last year. The summary, as compiled by the Car Service Division, Association of American Railroads, follows:

Revenue Freight Car Loadings

For Week Ended Saturday, November 5

Districts	1938	1937	1936
Eastern	144,410	151,353	157,442
Allegheny	119,806	131,992	149,931
Southern	98,833	109,209	108,902
Pocahontas	49,808	50,123	53,159
Northwestern	92,650	94,801	108,913
Central Western	115,519	129,106	118,923
Southwestern	52,307	62,181	62,345
Total Western Districts	260,476	286,088	290,181
Total All Roads	673,333	728,765	759,615
Commodities			
Grain and Grain Products	39,467	43,428	29,330
Live Stock	19,152	18,409	19,077
Coal	128,413	142,547	151,118
Coke	6,267	7,580	11,314
Forest Products	28,341	32,326	32,541
Ore	23,496	23,294	38,791
Merchandise L.C.L.	157,828	167,553	168,843
Miscellaneous	270,369	293,628	308,601
November 5	673,333	728,765	759,615
October 29	708,840	768,024	814,514
October 22	705,628	770,156	816,242
October 15	726,612	806,095	826,525
October 8	702,965	812,258	820,570
Cumulative Total, 44 Weeks	25,663,176	33,031,248	30,496,770

In Canada.—Car loadings for the week ended November 5 totaled 53,960, as compared with 57,874 in the previous week and 56,987 a year ago, according to the weekly statement of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
Nov. 5, 1938	53,960	23,147
Oct. 29, 1938	57,874	22,634
Oct. 22, 1938	62,030	22,930
Nov. 6, 1937	56,987	26,758
Cumulative Totals for Canada		
Nov. 5, 1938	2,075,854	905,248
Nov. 6, 1937	2,245,581	1,166,115
Oct. 31, 1936	2,082,639	1,018,713

Circuit Court Upholds N. J. on 1932-1933 Taxes

New Jersey railroads that have withheld a total of $10,000,000 in state taxes levied for 1932 and 1933 must pay up, as the law now stands, or seek relief through other means than the courts, according to a unanimous decision handed down on November 15 at Philadelphia, Pa., by a three-judge U. S. circuit court of appeals, made up of John Biggs, Jr., Joseph Buffington and J. W. Thompson. Two railroads—the Lehigh Valley and the Central of New Jersey—were concerned in litigation for 1932 and 1933 taxes, while, in addition, the New York Central, Erie and Delaware, Lackawanna & Western were appellants with respect to 1933 taxes. The controversy came under the jurisdiction of the circuit court last year when Judge Philip Forman, of the U. S. district court at Trenton, N. J., held against the carriers in his decision on taxes withheld from 1932 levies on the basis of the record and denied jurisdiction in litigation on 1933 taxes because, as he declared, the railroads had not exhausted legal possibilities in the state courts.

Of significance in the circuit court's decision is the expressed opinion that while the contested state tax assessments do not constitute an undue burden on interstate commerce or violate the "due process" clause of the Federal Constitution, nevertheless "the record now before us convinces us that the method of assessment employed by the state of New Jersey for railroad properties may be justly criticized and might well be subject to revision." On the whole, the court was of the belief that "taxation is a legislative matter in the first instance and a matter of administration in the second," and that the railroads should seek legislative relief.

New Jersey carriers involved in the tax litigation have, in recent years, followed the policy of paying 60 per cent of each year's levy as it falls due and withholding 40 per cent. The district court at Trenton has heard the carriers' appeal against allegedly excessive state tax levies for 1934, 1935 and 1936 and it was expected that Judge Forman's decision thereon would follow close upon the heels of the circuit court's decision on 1932-1933 taxes. In addition the carriers have withheld 40 per cent of their 1937 taxes and brought their case before the state Board of Tax Appeals. Should they follow a similar policy with regard to 1938 levies, a total of over $40,000,000, in withheld taxes will be involved in litigation. With the addition of penalties and interest, which together amount to one per cent per month, the total amount involved will reach about $50,000,000.

The carriers involved in the total litigation against state taxation for all the years 1933-1937, inclusive, comprise the Erie, New Jersey & New York, New York, Susquehanna & Western, Lehigh Valley, New York Central, Delaware, Lackawanna & Western, Central of New Jersey, and the Reading. The latter was not concerned in the 1933 case.

Lehigh Strike Rumor Cleared Up

In response to newspaper reports which have lately been appearing in Eastern dailies regarding a threatened strike of railway clerks on the Lehigh Valley because of the allegedly excessive lay-offs, J. J. Buckley, chairman of the Brotherhood of Railway Clerks on the Lehigh Valley, Buffalo, N. Y., has issued a statement to the effect that no strike ballot is being taken by his organization, and has wired *Railway Age* to the effect that he has released the following statement to the Associated Press at Buffalo: "The laws of the Brotherhood of Railway Clerks provide that machinery set up under the Railway Labor Act be utilized before strike policy is distributed."

Dick Discusses Possible Aid by Investors

That investors in railroad securities must make known to the carriers and public bodies the exact conditions upon which they would make future investments in the industry was the main contention in a talk before the Savings Bank Division of the American Bankers Association Convention meeting at Houston, Texas, on November 16, by Fairman R. Dick, member of the firm of Dick and Merle-Smith of New York, chairman of the research committee of the Transportation Association of America, and formerly financial adviser to the Association of American Railroads. "Unless investors make clear the conditions under which they will continue to purchase railroad securities in the future," Mr. Dick declared, "we shall drift into government ownership without knowing how or why. The greatest danger in the whole situation today is the refusal of the public to pay the full cost of railroad transportation, not because they are unwilling to pay this cost, but because they do not know what it really is. If as investors we fail to make clear what this cost is, government ownership will come through sheer default."

The three conditions which Mr. Dick outlined as necessary to restoration of railroad credit included: (1) setting up a definite standard of adequate earnings for the future which would safeguard further outlays of capital funds for the carriers; (2) methods of modification and a sharper definition of the responsibility of federal agencies which would end the progressive weakening of railroad capital structures; and (3) a basic change in proposals for the reorganization of bankrupt railroads as presented by bondholder and other investor committees.

Concerning the investor's responsibilities in the situation, Mr. Dick declared:

"The failure of investors to buy railroad securities under existing conditions has produced the present emergency. Yet the very *sine qua non* of continued private ownership is maintenance of credit conditions which will insure a continuous supply of fresh funds. That supply can only be provided as the investor makes clear the conditions under which he will again purchase railroad securities.

"Let us ask ourselves whether we have really discharged this primary obligation which now seems to rest upon us. Have we laid down for the Interstate Commerce Commission, for the Reconstruction Finance Corporation, or other public agencies which exercise such regulatory control, our views as to basic earning requirements for the railroad industry as a whole? Have we ever determined, even for our own guidance, the minimum earning needs essential to a thorough rehabilitation of railroad credit? Have these requirements been put in such clear and unmistakable terms that neither the railroads nor the government agencies nor the general public could fail to understand them thoroughly?

"The questions thus raised go directly to the heart of the problem. No sound solution is possible so long as the public is led to believe that sound credit conditions can be restored regardless of earnings, or that fiduciary institutions will continue to supply new money under conditions which contemplate the repetition of past mistakes and further eras of bankruptcies."

R. B. A. Urges Railroad Subsidy

Suggesting that a half dozen or more of the proposed measures for railroad relief, (including, among others, the Pettengill

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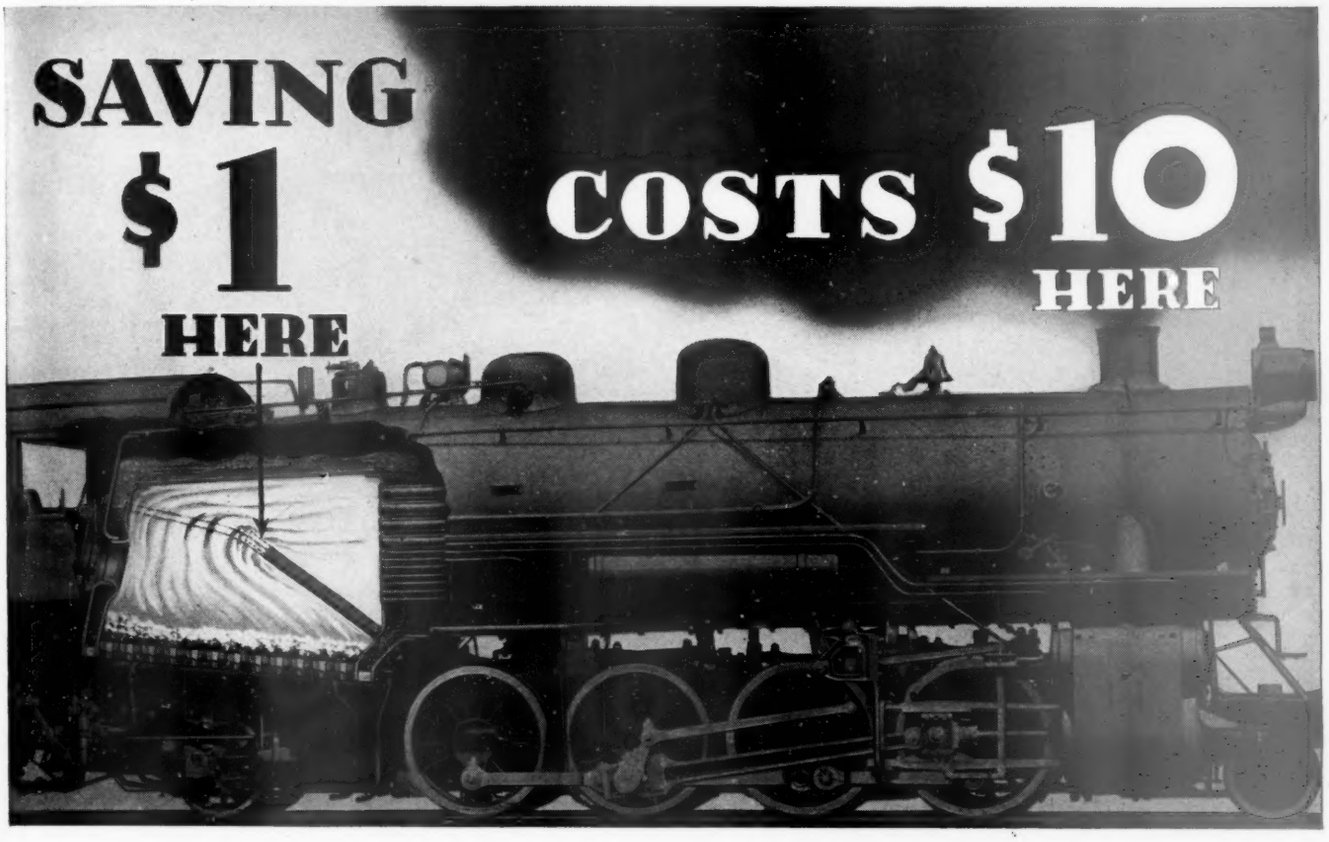


. . a shortened arch falls short of full economy

SCRUTINIZE every dollar of expenditure today. But do it thoroughly, considering the inter-relating effect on other items, to determine the net economy.

Paring down on Arch Brick only means buying more fuel. Here is one false economy that means a net loss to the railroad.

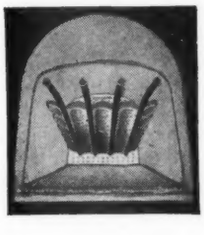
Now, when economy is needed so sorely, don't handicap the effectiveness of the Arch by skimping on Arch Brick.

Any reduction in the number of courses of the Arch wastes $10.00 in fuel for every $1.00 of Arch Brick thus saved.

You need a full Arch for full economy.

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists



AMERICAN ARCH CO.
INCORPORATED
60 EAST 42nd STREET, NEW YORK, N. Y.
Locomotive Combustion Specialists

bill) ought to be jettisoned because they may tend to "lead to confusion" and arouse opposition to a more fundamental dealing with railroad problems, the Railway Business Association, at its annual meeting in New York, on November 16, proposed four relief measures as fundamental. They are as follows:

"(1) A general program of railroad legislation should contain a formal declaration by Congress in favor of the policy of private ownership and operation of the railroads.

"(2) A general program of railroad legislation should definitely promote consolidation of the railroads into a much smaller number of systems. The present plan restrictions of the Interstate Commerce Act should be repealed; and for a limited time—seven years—voluntary consolidation should be the method, subject to the Interstate Commerce Commission approval if in the public interest, together with some provision for contemporaneous study of the advisability of, and formulation of plans for compulsory consolidation at the end of that probationary period. The I. C. C. should have the power to authorize condemnation of properties where minorities unreasonably block the consummation of an otherwise desirable consolidation. In interpreting the public interest, the I. C. C. should give due consideration to competition, but should not seek to preserve competition as fully as possible.

"(3) A general program of railroad legislation should contain a revised Section 15a, better designed to accord the investor as much assurance that the regulatory process will not disregard his rights, as a mandate, which is not a guaranty, can give. It should be phrased in general terms, to avoid undue emphasis upon any one factor of reasonableness in its administration; and should be definite in its specification of the standard of fair return, in order to avoid litigation over that subject.

"(4) A general program of railroad legislation should contain a definite subsidy to the railroads, limited to a period of from three to five years, and based upon a defined proportion, say 25 per cent, of their expenditures for maintenance of way and structures during the preceding year."

In contrast with these proposed measures, the association was of the opinion that a body of currently-discussed measures be thrown in the discard because, among other things, they may draw consolidated opposition from hitherto separated pressure groups to important proposals for railroad relief and because "there is good reason for the belief that if all of them should be adopted and made effective, their total effect upon the aggregate net railway operating income of the carriers would be of rather modest proportions." Some of the projects that the association would have abandoned are: (1) the Pettingill bill to repeal the long-and-short haul clause of the Fourth Section; (2) repeal of the land grant rate obligation; (3) amendment of Section 13 to increase the power of the Interstate Commerce Commission over intra-state rates; (4) amendment of the Clayton Act; (5) elimination from existing statutes the provision that government officials intervene in rate cases; (6) changes in reparation practices; (7) disposal of the Federal Brage Line; (8) dismissal compensation credits in unemployment taxes.

During the meeting the following officers were reelected: President — Harry A. Wheeler; Vice-Presidents — George E. Scott, president, American Steel Foundries; George W. Struble, assistant to vice-president, Bethlehem Steel Company; William C. Dickerman, president, American Locomotive Company; and William B. Given, Jr., president, American Brake Shoe & Foundry Co.; Secretary-Treasurer — P. Harvey Middleton. C. A. Liddle, president, Pullman - Standard Car Manufacturing Company, was elected a new vice-president. An executive committee of 10 members was also appointed or reappointed for the ensuing year.

Construction

CHICAGO & NORTH WESTERN.—A contract has been awarded amounting to approximately $15,000 to Peppard, Pierson & Wollan Company, Minneapolis, Minn., for driving cluster piles and renewing pier protection fenders on this company's Illinois River bridge at South Pekin, Ill.

GRAND TRUNK WESTERN.—A contract has been awarded by this road to Hamer Bros, Inc., Detroit, Mich., for the replacement of a 30 ft. deck-plate girder span on brick abutments over Cascade street in Ada, Mich., with a new 45 ft. semi-through-plate girder span on concrete abutments. The total cost of the work involved will be approximately $50,000.

NEW YORK CENTRAL.—Contracts have been given to Bernard J. Hughes, Inc., New York, for restoration of Pier "C," St. Clair Place, New York, and to James O'Connel, Bronx, N. Y., for furnishing certain equipment and labor to be used between West 93rd and West 181st streets in Riverside and Fort Washington parks.

THE NEW YORK, NEW HAVEN & HARTFORD.—A contract has been given to the Wilson & English Construction Company, New York, for the construction of a new highway bridge over the tracks of the New York Connecting Railroad at Eliot avenue, Bridge No. 3.00, Borough of Queens, New York.

ST. LOUIS, MO.—President Roosevelt has approved a non-Federal P. W. A. project at St. Louis at an estimated cost of $336,000 for which a grant of $151,200 has been made. The present plans propose the completion of an existing interlocking and automatic signaling system on the Municipal Bridge and its approaches. At Eighth and Gratiot streets, unfinished work will be completed to make proper connections for the use of the Terminal Railway Association. At Twelfth street, pier changes will be made, consisting of removing two existing piers and replacing with two new piers to provide clearances due to not being able to obtain land for Missouri Pacific tracks. The east track of the southern approach will be relaid with new rail and reconditioned generally. The southern approach will be cleaned and painted. The project is necessary to complete a train control system for an important location.

Supply Trade

The Chicago Railway Equipment Company, Chicago, has entered into a contract with the **Pullman-Standard Car Manufacturing Company** whereby it will take over all Pullman patents covering car doors and door fixtures.

OBITUARY

Samuel G. Rea, vice president in charge of sales in the Eastern district, of the Standard Railway Equipment Company, Chicago, with headquarters in New York, died in that city on November 16 of angina pectoris.

George Thomas Cooke, president of the American Railway Products Company, Darien, Conn., whose death on November 8 was reported in the *Railway Age* of November 12, was born at Chicago, on May 28, 1883. Mr. Cooke began his career

George Thomas Cooke

in 1901 as apprentice draftsman with the Pullman Company. In 1903 he served as chief draftsman at the Pullman Calumet shops, then from 1906 to 1911 was mechanical inspector. He served from 1911 to 1917 as southern manager of the Chicago Car Heating Company, Atlanta, Ga., and then went to New York as eastern manager of the Vapor Car Heating Company. From 1918 to 1925 he was vice-president of the Union Metal Products Company and during the latter year became president of the American Railway Products Company. Mr. Cooke then began the manufacture of devices of his own invention. He served for many years as chairman of the finance committee of the New York Railroad Club.

Continued on next left-hand page

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Even Superheater Units

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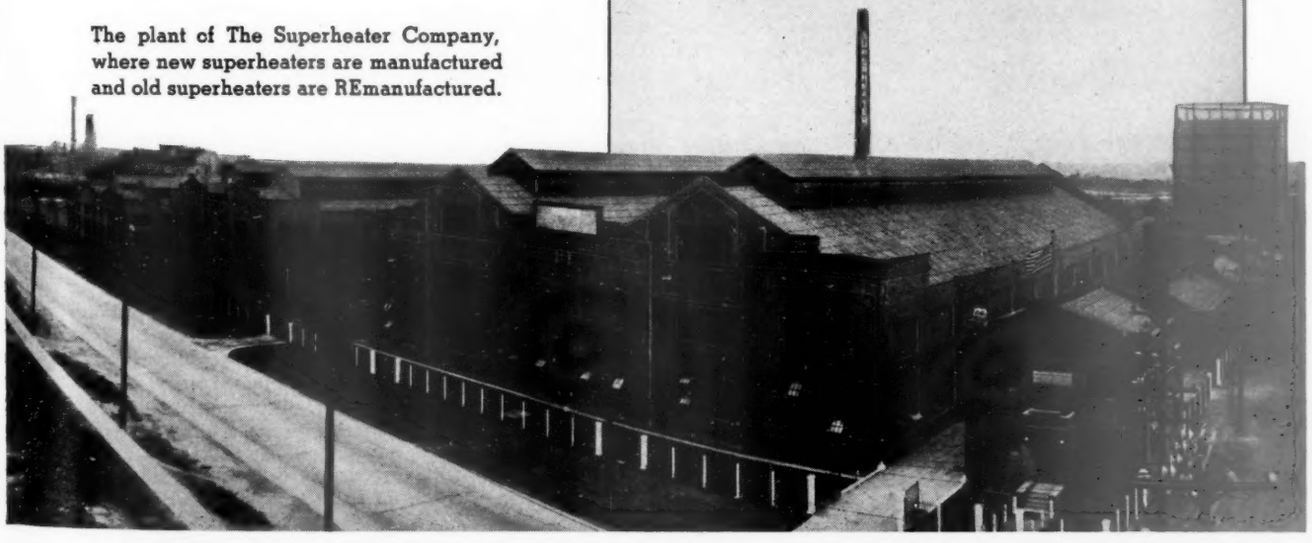
At the end of that life do not continue them in service or you will invite superheater failure and perhaps engine failure.

Old units do not have to be scrapped . . . send them to our plant where their life will be dependably extended . . . by REmanufacturing—not repairing; and the cost is less than the ultimate cost of a patch repair job.

The plant of The Superheater Company, where new superheaters are manufactured and old superheaters are REmanufactured.



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Representative of AMERICAN THROTTLE COMPANY, INC.
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Equipment and Supplies

FREIGHT CARS

THE WHEELING & LAKE ERIE is asking for bids on 400 all-steel 60-ton self-clearing hopper cars.

THE UNITED STATES NAVY DEPARTMENT, Bureau of Supplies and Accounts, will receive bids on December 2 for two flat cars and two box cars of 50-tons' capacity.

THE CORNWALL RAILROAD has placed an order with the Bethlehem Steel Company for 20 all-steel ore cars of 75 tons' capacity. The cars will be similar to those now in service on this road and should be ready for delivery early next year.

THE ILLINOIS CENTRAL is studying a proposal that it order 1,000 freight cars under the same leasing arrangement that applied to a recent order for 1,000 box cars placed with the American Car & Foundry Company.

IRON AND STEEL

NEW YORK, NEW HAVEN & HARTFORD.—A contract has been given to the American Bridge Company for 150 tons of steel by the Wilson & English Construction Company, New York, who have the contract for constructing a new highway bridge over the tracks of the New York Connecting Railroad in the Borough of Queens, New York.

SIGNALING

ILLINOIS CENTRAL-YAZOO & MISSISSIPPI VALLEY.—Sealed proposals will be received at the office of A. C. Mann, vice-president and purchasing agent, Illinois Central, Chicago, until 9:00 a. m. (c.s.t.), December 5, 1938, for the furnishing of signal materials to be used in connection with a federal aid highway grade crossing protection project in the state of Mississippi.

THE CHICAGO, ROCK ISLAND & PACIFIC will receive bids in the office of its purchasing department, 713 LaSalle Street station, Chicago, until 10:00 a. m. (c.s.t.), November 28, for furnishing material for 11 railroad grade crossing flashing light signal installations to be installed in the State of Colorado under the U. S. Bureau of Public Roads signaling project FAGM.

GULF, MOBILE & NORTHERN.—Sealed bids will be received by this road on all materials necessary for the installation of electric flashing highway crossing signals to be installed at Bemis, Tenn., under federal grade crossing project FAGS-25-A-(1). The bids will be opened at 12:00 noon, November 30, 1938. Further details may be obtained from H. E. Warren, manager purchases and stores of this road, 71 Conti street, Mobile, Ala.

Financial

CHICAGO, GREAT WESTERN.—*Abandonment.*—The trustees have asked the Interstate Commerce Commission for authority to abandon three miles of line in Winona, Minn.

CHICAGO GREAT WESTERN.—*Petition for Reconsideration Denied.*—The Interstate Commerce Commission, Division 4, has denied the petitions of the protective committee of the preferred stockholders and the petition of the protective committee of the common stockholders for a rehearing in this company's reorganization case.

COLORADO & SOUTHERN.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has, upon rehearing, affirmed its previous finding authorizing this company to abandon that part of its Clear Creek lines extending from Idaho Springs, Colo., to Silver Plume. Commissioner Porter dissented in part, saying that he would abandon only that part west of Empire, Colo.

ERIE.—*Auction of Chesapeake Holdings.*—The Chesapeake Corporation has given formal notice that it will auction off 69,000 shares of Erie common stock, on November 29, at Adrian H. Muller & Son, 18 Vesey street, New York.

ERIE.—*Equity in Pittston.*—A plan designed to strengthen the Erie's equity in the event of dissolution or liquidation of the Pittston Company, which owes the Erie approximately $10,000,000, was submitted to a special master at Cleveland, Ohio, on November 9. The plan agreed upon by trustees for the Erie and for the mortgage holders, the Reconstruction Finance Corporation, and representatives of Pittston, was unopposed, and a masters report will be made to the Federal Court later. Under the plan the Erie receives stock for its claims on Pittston, which is controlled by the Chesapeake & Ohio. Another provision of the plan is a conversion privilege which would give Erie the right to obtain control of Pittston should such a move be desirable in the future.

HAWAII CONSOLIDATED.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this company to abandon that portion of its Olaa-Glenwood branch extending from station 471 plus 51 to the terminus of the line at Glenwood, 8.3 miles, all in Hawaii County, Territory of Hawaii.

KENTUCKY & INDIANA TERMINAL.—*Pledge and Repledge of Bonds.*—The Interstate Commerce Commission, Division 4, has modified its order of June 17, 1937, so as to permit this company to pledge and repledge, to and including June 30, 1940, all or any part of $511,000 of first mortgage 4½ per cent gold bonds, as collateral security for any short-term notes that it may issue.

MAINE CENTRAL.—*Joint Operation.*—This company has asked the Interstate Commerce Commission for authority to operate, under a contract for joint usage, over a line of the Boston & Maine between Lancaster, N. H., and Groveton, 8.9 miles.

MCCLOUD RIVER.—*Notes.*—The Interstate Commerce Commission, Division 4, has authorized this company to issue a promissory note or notes for $150,000, to be disposed of at par and the proceeds applied to the payment of an outstanding note and the purchase of equipment.

MINNEAPOLIS & ST. LOUIS.—*Receiver's Certificates.*—The Interstate Commerce Commission, Division 4, has authorized the receiver to issue $550,000 of receiver's certificates to renew or extend maturing certificates of a like amount.

PENNSYLVANIA.—*Abandonment by the Baltimore & Eastern.*—The Interstate Commerce Commission, Division 4, has authorized the Baltimore & Eastern to abandon the following parts of its line: (1) Its Centreville branch, extending from Centreville Junction, Md., to Centreville, 5.4 miles; (2) the part of its Claiborne branch extending from McDaniel, Md., to the western terminus of the branch at Claiborne, 1.9 miles; (3) the part of its main line extending from Easton Junction, Md., to Preston, 9.6 miles; (4) the part of its main line extending from Vienna station, Md., to Mardela Springs station, 3 miles; and (5) the part of its main line extending from a point on the west side of Sinepuxent Bay, Md., to the eastern terminus of the main line in Ocean City, 0.4 miles.

SACRAMENTO NORTHERN.—*Operation and Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this company to (1) operate under trackage rights over the tracks and facilities of the Bridge Railway of the California Toll Bridge Authority, in Alameda and San Francisco Counties, Calif., 6.8 miles and (2) to abandon operation under trackage rights over the tracks of the Key System on the east side of San Francisco Bay, in Alameda County, Calif, 2.7 miles.

ST. LOUIS-SAN FRANCISCO.—*Interest Payment.*—The United States District Court at St. Louis, on November 9, instructed the trustees of the St. Louis-San Francisco to pay $950,260 in interest due April 1, 1933, on Kansas City, Fort Scott & Memphis railway mortgage bonds. Payment of interest had been denied because of uncertain financial conditions, but according to the trustees, the Frisco's cash balance on October 30 was $6,189,837, and present revenues justify payment of the interest. Trustees asked permission to withhold payment until December 1.

ST. LOUIS - SOUTHWESTERN.—*Southern Pacific Claim.*—A hearing on a claim of the Southern Pacific against the St. Louis-Southwestern for $18,452,575 was held by a special master at St. Louis, Mo., on November 14. In 1932, the Southern Pacific guaranteed an R. F. C. loan to the Cotton Belt and when it filed its bankruptcy petition in 1935, the Southern Pacific paid the full amount, $18,352,575, to the R. F. C. The R. F. C.'s claim, filed in the reorganization proceedings, and col-

Continued on next left-hand page

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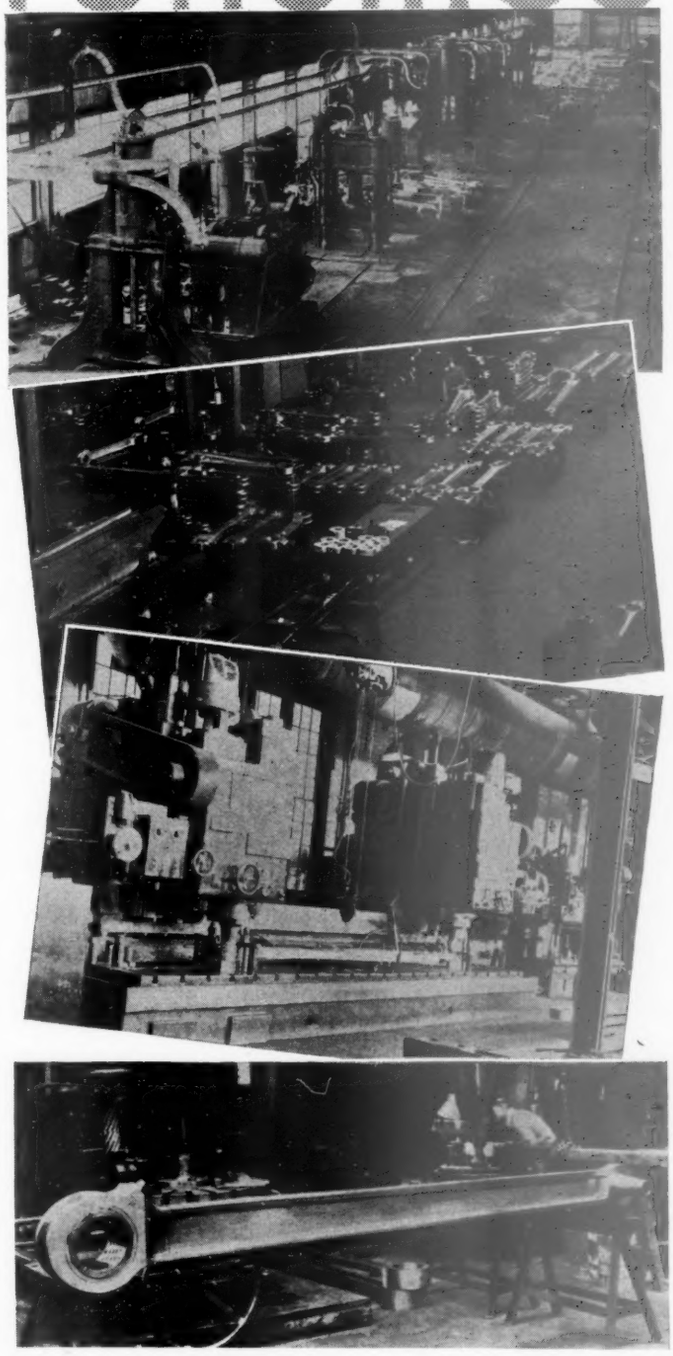
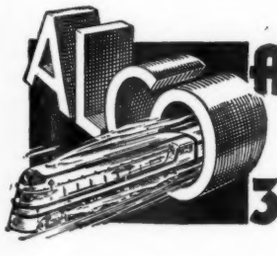
LONG engine runs coupled with faster schedules emphasize the need for light-weight forgings of unusual strength and stamina. Cognizant of the severity of this high speed service, Alco builds forgings of highest quality to insure the continued serviceability and earning power of locomotives.

Steels of exactly the correct metallurgical composition, manipulated and supervised by experts, are worked into forgings of great durability. Forging strains are carefully relieved—course and irregular grain structures are refined—annealing, normalizing and other heat-treating processes are all essential in Alco manufacture. Machining refinements produce precision, mirror-like finishes to exact dimensions—all to achieve the acme of perfection.

With a century of experience Alco represents a coordination of specialists—a forging service supported by the latest in plant facilities that rarely can be duplicated and surely cannot be surpassed.





AMERICAN LOCOMOTIVE COMPANY

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lateral consisting of $23,903,000 of Cotton Belt General and Refunding Mortgage bonds and $475,000 of Southern Illinois & Missouri Bridge Company bonds were assigned to the Southern Pacific.

Protesting bondholders who hold $1,878,435 of Cotton Belt First Terminal and Unifying Mortgage bonds contend that the Southern Pacific claim should not be allowed in its entirety, for the Southern Pacific in purchasing the Cotton Belt note merely paid its own indebtedness, since the Southern Pacific owned 87 per cent of Cotton Belt stock and dominated the latter to such an extent that in fact the two were one company. The Southern Pacific contends that the roads were always two separate companies.

SMOKY MOUNTAIN. — *Abandonment.* — Examiner Jerome K. Lyle of the Interstate Commerce Commission, in a proposed report to the commission, has recommended that it deny this company authority to abandon its line extending from Vestal, Tenn., to Sevierville, 29.2 miles. The Examiner has also recommended that the commission authorize the Tennessee & North Carolina to abandon operation over the tracks of the Southern between Vestal, Tenn., and Knoxville, 2.2 miles.

SOUTHERN.—*Abandonment.* — Examiner Jerome K. Lyle of the Interstate Commerce Commission, in a proposed report to the commission, has recommended that it authorize this company to abandon a branch line extending from Purcellville, Va., to Bluemont, seven miles. The examiner would also have the commission authorize the Washington & Old Dominion to abandon the operation of the line.

WESTERN PACIFIC.—*RFC Loan Approved.*—The Interstate Commerce Commission, Division 4, has conditionally approved a loan to the trustees by the Reconstruction Finance Corporation of $10,000,000, the proceeds to be used to retire a like amount of outstanding trustees' certificates which will mature December 1, 1938. The loan will bear interest at four per cent and will be for a period of not more than two years. As collateral security for the loan, the trustees will deposit with the RFC $10,000,000 of their certificates of indebtedness which have already been authorized by the commission.

Average Prices of Stocks and Bonds

	Nov. 15	Last week	Last year
Average price of 20 representative railway stocks..	32.28	33.17	33.64
Average price of 20 representative railway bonds..	62.17	62.31	68.24

Dividends Declared

Cincinnati, New Orleans & Texas Pacific.—Preferred, $1.25, quarterly, payable December 1 to holders of record November 15.

Illinois Central.—4% Leased Lines.—$2.00, semi-annually, payable January 1 to holders of record December 12.

Kansas City Southern.—$1.00, preferred, payable December 1 to holders of record November 14.

North Pennsylvania.—$1.00, quarterly, payable November 25 to holders of record November 14.

Pennsylvania.—50c, payable December 20 to holders of record November 19.

Pittsburgh & Lake Erie.—$1.25, payable December 15 to holders of record November 19.

Pittsburgh, Youngstown & Ashtabula.—Preferred, $1.75, quarterly, payable December 1 to holders of record November 21.

Railway Officers

FINANCIAL, LEGAL AND ACCOUNTING

Thomas J. Lawless, whose promotion to assistant general counsel of the Chi-

Thomas J. Lawless

cago, Burlington & Quincy, with headquarters in Chicago, was announced in the *Railway Age* of November 12, was born in Roodhouse, Ill., on October 1, 1875, and graduated from Valparaiso University in 1903. He was admitted to the bar in Illinois in 1905, and became a member of the firm of Kraus, Alachuler & Holden and later of the firm of Kraus, Holden & Lawless, practicing in Chicago. In 1917, he was appointed an attorney for the C. B. & Q., and on July 1, 1924, he was promoted to general attorney, with headquarters at Chicago, the position he held at the time of his recent promotion.

Eldon M. Martin, whose promotion to general attorney of the Chicago, Burlington & Quincy, with headquarters at Chicago, was announced in the *Railway Age* of November 12, was born at Cottonwood

Eldon M. Martin

Falls, Kan., and graduated from the University of Kansas in 1924. He entered railway service in 1924, in the law department of the Atchison, Topeka & Santa Fe, and began the study of law at Kent College of Law, graduating from that school in 1929. He was admitted to the bar in California in 1929, and entered law practice in San Francisco, Cal., in June of that year. Mr. Martin returned to Chicago in March, 1931, entering the service of the C. B. & Q. as assistant general attorney, with headquarters at that point.

Walter McFarland, whose promotion to general solicitor of the Chicago, Burlington & Quincy, with headquarters at Chicago, was announced in the *Railway Age* of November 12, was born at Washington, D. C., on March 30, 1888, and graduated from Georgetown University Law School in 1911. He began the general practice of law in the District of Columbia on October 1, 1911, and was appointed a special agent in the Bureau of Inquiry of the Interstate Commerce Commission on February 11, 1913. On April 8, 1913, he was promoted to assistant attorney, and on June 1, 1914, he was appointed confidential clerk to one of the commissioners. He was advanced to attorney on December 1, 1914, and given the official designation of examiner. On June 1, 1920, he was appointed assistant

Walter McFarland

counsel for the commission, but left that position to become general attorney for the C. B. & Q., with headquarters at Chicago on July 1, 1924.

OPERATING

George H. Hill, freight agent on the Pennsylvania at Buffalo, N. Y., has been promoted to superintendent of stations and transfers of the Western region, with headquarters at Chicago, succeeding **Jay C. Zittle,** who has been assigned to other duties.

Mahlen H. Griffin, freight agent on the Pennsylvania at Toledo, Ohio, has been promoted to supervising agent of the Erie and Ashtabula division, with headquarters at New Castle, Pa., succeeding **J. H. Litty,** who has been appointed freight agent at Youngstown, Ohio.

Harry N. Rowles, assistant trainmaster of the Pittsburgh division of the Pennsyl-

vania, has been promoted to trainmaster and road foreman of engines of the Toledo division, with headquarters at Toledo, Ohio, succeeding **Antone Miller,** who has been transferred to the Grand Rapids division, with headquarters at Grand Rapids, Mich., replacing **J. D. Scott,** deceased.

George W. Blake, assistant superintendent of the Fitchburg division of the Boston & Maine, has been appointed superintendent of that division, with headquarters at Greenfield, Mass., to succeed **John A. Ahern,** who will resign on December 1. Mr. Ahern was born at White River Junction, Vt., on June 13, 1868, and became a messenger boy at the joint Western Union, Central Vermont, Passumpsic railroad and Northern railroad telegraph offices there in June, 1881. He became a telegrapher in July, 1882, and served in that capacity at the White River Junction office until September 18, 1888. Resigning from railroad service, he was employed by the Western Union and Postal Telegraph companies in Boston from September, 1888, to October, 1890, and then returned to railroad service at White River Junction as a telegrapher. In January, 1891, he was promoted to train dispatcher at Lyndonville, Vt.; in 1912, to chief dispatcher; in 1914, to trainmaster; and in 1916, to assistant superintendent. Mr. Ahern was appointed superintendent of the Connecticut & Passumpsic division, north, in 1918, and was appointed superintendent of the Fitchburg division on September 1, 1925.

William M. Mathews, general agent of the Railway Express Agency, with headquarters at Atlanta, Ga., has been appointed superintendent of the Georgia division, with the same headquarters. Mr. Mathews has been in express service in the south for 28 years. He served as deliveryman, messenger, agent and route agent until July, 1924, when he was assigned to the agency at Chattanooga, Tenn., which position he held for 12 years. In

William M. Mathews

April, 1936, Mr. Mathews left Chattanooga to go to Atlanta as general agent, the position he held until his recent appointment.

J. E. Kemp, assistant superintendent of the Grand Junction division of the Denver & Rio Grande Western, with headquarters at Grand Junction, Colo., has been promoted to superintendent of that division with the same headquarters, succeeding **B. H. Decker,** who has been transferred to the Salt Lake division, with headquarters at Salt Lake City, Utah, replacing **Hugh Wilson,** who retired on November 1. **K. L. Moriarty,** trainmaster, with headquarters at Helper, Utah, has been promoted to assistant superintendent of the Grand Junction division, with headquarters at Grand Junction to succeed Mr. Kemp, and **J. R. Loftis,** trainmaster with headquarters at Salt Lake City, Utah, has been advanced to assistant superintendent of the Salt Lake City division, a newly created position, with headquarters at Salt Lake City. **L. A. Kane** has been appointed trainmaster, with headquarters at Helper, Utah, relieving K. L. Moriarty, and the position of trainmaster at Salt Lake City has been abolished.

H. H. Harsh, whose appointment as superintendent of the Newark division of the Baltimore & Ohio, at Newark, Ohio, was noted in the *Railway Age* of November 5, was born on May 22, 1885. He

H. H. Harsh

started his railroad career as assistant on an engineering corps in the maintenance of way department of the Baltimore & Ohio at Chicago on June 1, 1906. Mr. Harsh served in this capacity on the old Ohio River division and Wheeling division until appointed assistant division engineer at Wheeling on August 1, 1910. He was appointed division engineer at Wheeling on January 1, 1912, and was consecutively transferred in the following 17 years to Cleveland, Ohio, Pittsburgh, Pa., and Akron, Ohio, becoming division engineer at Akron on August 1, 1929. He became assistant superintendent of the combined Akron-Chicago division on February 15, 1936, at Garrett, Ind., returning to Akron as division engineer on March 20, 1938, the position he held until his recent appointment as division superintendent.

R. P. Russell, whose appointment as superintendent of the relief and pension departments of the Pennsylvania, with headquarters at Philadelphia, Pa., was noted in the *Railway Age* of November 5, was born in Cameron county, Pa., in 1885. He entered the service of the Pennsylvania in 1902, starting as a clerk in the office of the freight and passenger agent at Northumberland, Pa. After serving in various capacities on a number of divi-

R. P. Russell

sions he became assistant superintendent of the Pittsburgh terminal division in 1920, and of the Pittsburgh division the following year. He was advanced to superintendent of freight transportation, Eastern region, in 1923. Mr. Russell was appointed superintendent of the Philadelphia terminal division in 1926 and of the Maryland division in 1929, becoming superintendent of car service on July 1, 1932, the position he held until his recent appointment.

TRAFFIC

Z. P. Hawkins, assistant traffic manager of the Columbus & Greenville, with headquarters at Columbus, Miss., has been promoted to acting traffic manager, with the same headquarters, succeeding **N. V. Hutchinson,** who has requested a furlough pending his retirement at the end of the year.

W. T. Burns, general agent in the freight department on the Union Pacific at New York, has been promoted to assistant freight traffic manager, with headquarters at Chicago, succeeding **Fred L. Feakins,** whose death on November 6 was announced in the *Railway Age* of November 12. **H. C. Yerger,** employed in the freight department at New York, has been advanced to general agent at Boston, Mass., replacing **Morton Mann,** who has been transferred to Philadelphia, Pa., relieving **H. L. Lauby,** who in turn, has been transferred to New York succeeding Mr. Burns.

Chester G. Hayes, assistant general freight agent on the Texas & Pacific, with headquarters at Dallas, Tex., has been promoted to traffic manager, a newly created position, succeeding to the duties of **John B. Payne,** vice-president in charge of traffic, whose death on November 9, is reported elsewhere in these columns. Mr. Hayes entered railroad service in 1912 as a clerk in the operating department of the Alton at Bloomington, Ill. Two years later he went with the Pennsylvania as a stenographer at Chicago, and in 1917, he

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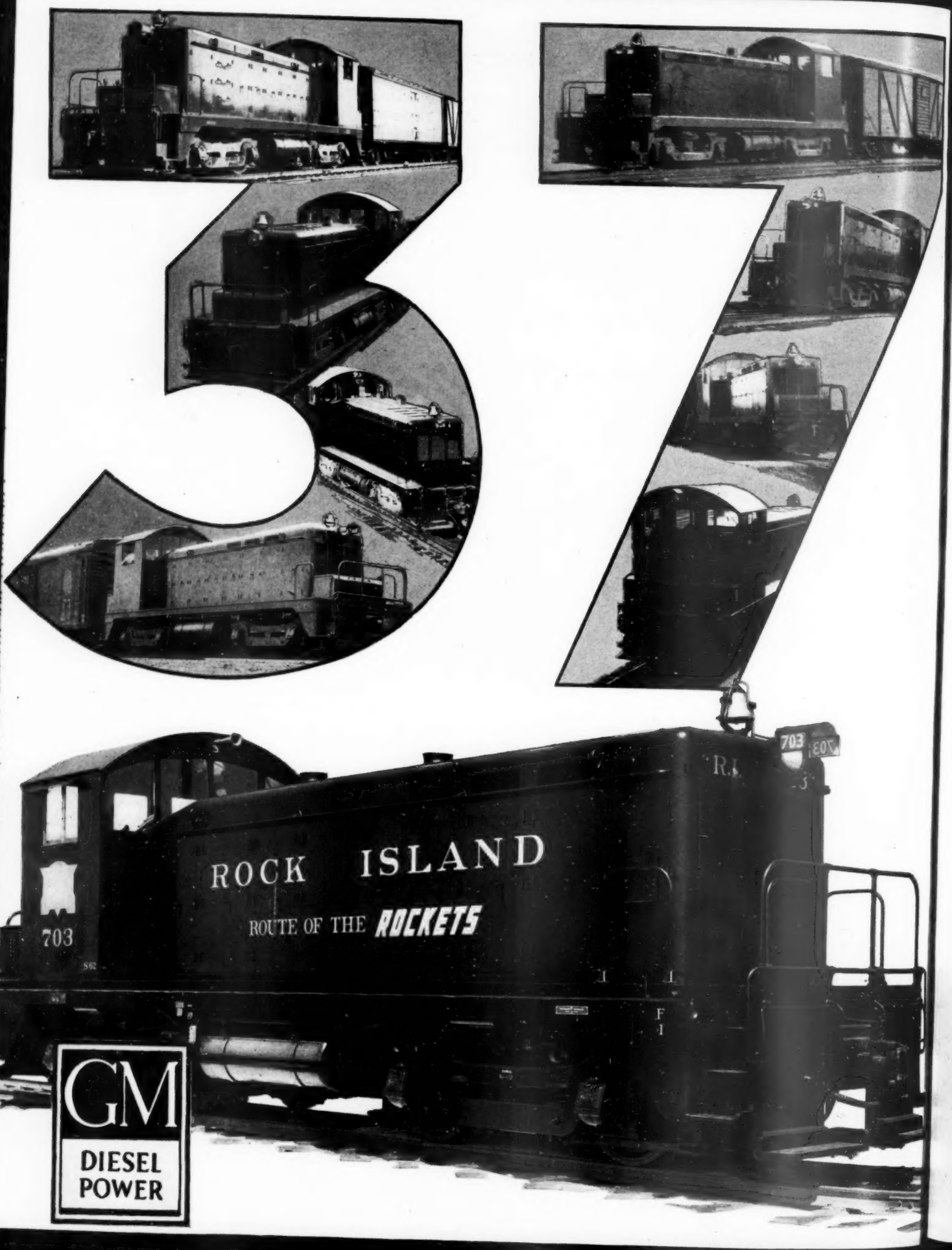

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Actual service records show that these reliable money-savers have reduced fuel expenses by 75 per cent — water costs are nil — maintenance and enginehouse expenses have been reduced materially with the net result that each unit is saving an average of $1,000.00 per month over and above carrying and amortization charges. And what is even more striking — these 37 EMC Diesels have replaced 80 steam switchers.

E CORPORATION
RS LA GRANGE, ILLINOIS, U. S. A.

went with the Texas & Pacific in the Chicago commercial office. He subsequently advanced to the positions of secretary,

Chester G. Hayes

traveling freight agent and chief clerk. Mr. Hayes was promoted to general agent with headquarters at Detroit, Mich., in February, 1924, and four years later he was advanced to assistant general freight agent, with headquarters at Dallas.

Terah J. Stewart, whose appointment as general passenger agent of the Central of Georgia at Savannah, Ga., was noted in the *Railway Age* of November 5, was born at Thomaston, Ga., on March 11, 1893. After attending the Robert E. Lee Institute at Thomaston, and Southern Business College at Atlanta, Mr. Stewart entered the service of the Central of Georgia on May 9, 1913, as stenographer in the car accountant's office at Savannah, and was transferred to the passenger traffic department on May 13, 1914, where he served in various clerical capacities in the general passenger agent's office at Savannah until March 1, 1920, when he was appointed traveling passenger agent at Atlanta. Mr. Stewart was promoted to district passenger agent at Atlanta on September 16,

T. J. Stewart

1925, and to division passenger agent there on November 1, 1928. He returned to Savannah as assistant general passenger agent on January 1, 1937, the position he held until his recent appointment.

ENGINEERING AND SIGNALING

P. G. Savidis, assistant engineer on the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Chicago, has been promoted to office engineer in the chief engineer's office at that point, succeeding **Edward L. Bahls,** whose death on October 27, was reported in the *Railway Age* of November 5, and **Asa B. Chapman,** chief draftsman in the chief engineer's office at Chicago, has been advanced also to office engineer in that office, replacing **Hans J. Hansen,** whose death on November 4, was announced in the *Railway Age* of November 12.

John W. Wheeler, whose promotion to assistant chief engineer of the Burlington Lines, was announced in the *Railway Age* of November 12, was born at Crown Point, Ind., on May 31, 1893, and graduated in civil engineering from Purdue University in 1916. On May 20, 1916, he entered highway service as project engineer for the highway department of Vermillion County, Danville, Ill. After several years in highway engineering and con-

John W. Wheeler

tracting work, he was appointed State Highway Commissioner of Indianapolis on February 14, 1933. On January 15, 1937, he was made engineer of highway negotiations of the C. B. & Q., with headquarters at Chicago. Mr. Wheeler was also chairman of the Indiana State Planning Board from 1934 to 1938, and has been a director of the Chicago Regional Planning Association since 1934, and a member of the Board of Trustees of Purdue University since 1934.

OBITUARY

R. L. Latham, chief engineer of the Toronto, Hamilton & Buffalo, with headquarters at Hamilton, Ont., died on November 12.

Louis E. Wettling, who retired as manager of the statistical bureau of the Western Association of Railroad Executives, with headquarters at Chicago, on November 1, 1937, died on November 15, at the Evanston Hospital, Evanston, Ill.

Fred L. Feakins, assistant freight traffic manager of the Union Pacific, with headquarters at Chicago, whose death was announced in the *Railway Age* of November 12, was born at Cherry Valley, Ill., on May 2, 1875, and entered railway service in 1890 as a water boy on construction work on the St. Louis Southwestern in Texas. He later served with the Chicago, Rock Island & Pacific at Kansas City, Mo., and with the Colorado Midland. In 1914, he became New England agent of the Missouri Pacific with headquarters at Omaha, Neb. During the federal control of railroads, he served with the Inland Traffic Section under the director general and later went with the Ludlow Manufacturing Company, Ludlow, Mass., as traffic manager. Following the return of the railroads to private operation, he became general agent of the Union Pacific at Philadelphia, Pa., on February 15, 1920. Mr. Feakins was promoted to assistant freight traffic manager, with headquarters at Chicago on October 1, 1925.

Fred P. Johnson, chief financial officer of the Missouri Pacific, with headquarters at St. Louis, Mo., died on November 11, after a long illness in the Missouri Pacific Hospital in St. Louis. Mr. Johnson was born in New York on January 27, 1874, and entered railway service on February 5, 1889, as a messenger boy in the general auditor's office of the Missouri Pacific. He was later advanced through various clerical positions in the disbursement office, and in 1902, he was placed in charge of the department handling special operating statistics. In 1906, he was given charge of rate litigation during the period when passenger rates were being reduced from three cents to two cents a mile by acts of various state legislatures. In 1910, he was promoted to chief accountant of the operating department, and on June 1, 1911, he was placed in charge of the annual and interstate reports. On August 1, 1912, he was advanced to auditor of disbursements, and on March 1, 1913, he was further promoted to assistant general auditor. During the period of federal control of the railroads, he was federal auditor, and upon

Fred P. Johnson

the resumption of private operation on March 1, 1920, he was promoted to general auditor. Mr. Johnson was elected vice-president in charge of finance and accounts in 1926, his title later being changed to chief financial officer.

Operating Revenues and Operating Expenses of Class I Steam Railways

Compiled from 137 Monthly Reports of Revenues and Expenses Representing 141 Class I Steam Railways

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF SEPTEMBER, 1938 AND 1937

Item	United States		Eastern District		Southern District		Western District	
	1938	1937	1938	1937	1938	1937	1938	1937
Miles of road operated at close of month	234,423	235,309	57,967	58,144	44,614	44,773	131,842	132,392
Revenues:								
Freight	$261,302,843	$293,824,762	$97,734,289	$116,457,812	$52,617,950	$55,068,709	$110,950,604	$122,298,241
Passenger	34,427,270	38,734,466	19,010,564	21,771,144	3,778,019	4,585,975	11,638,687	12,377,347
Mail	7,594,708	7,825,482	2,908,636	3,035,644	1,290,122	1,312,899	3,395,950	3,476,939
Express	4,958,827	5,143,989	2,013,792	2,359,684	922,190	845,077	2,022,845	1,939,228
All other operating revenues	14,311,241	17,542,152	6,535,952	8,501,669	1,836,733	2,149,097	5,938,546	6,891,386
Railway operating revenues	322,594,889	363,070,851	128,203,243	152,125,953	60,445,014	63,961,757	133,946,632	146,983,141
Expenses:								
Maintenance of way and structures	41,397,695	45,349,166	15,343,445	18,158,472	6,514,012	7,238,142	19,540,238	19,952,552
Maintenance of equipment	56,386,442	68,772,597	23,395,526	30,299,743	10,979,237	12,721,345	22,011,679	25,751,509
Traffic	8,225,215	8,830,888	2,988,073	3,305,775	1,551,927	1,582,020	3,685,215	3,943,093
Transportation—Rail line	112,330,281	125,371,208	48,556,412	55,569,749	18,562,365	19,703,412	45,211,504	50,098,047
Transportation—Water line	336,850	482,486	.....	.....	.....	.....	336,850	482,486
Miscellaneous operations	3,338,440	3,707,957	1,374,169	1,646,157	293,196	341,918	1,671,075	1,719,882
General	10,323,710	10,795,508	4,091,295	4,158,798	1,951,478	2,088,382	4,280,937	4,548,328
Transportation for investment—Cr.	298,448	598,113	51,983	87,943	35,545	95,171	210,920	414,999
Railway operating expenses	232,040,185	262,711,697	95,696,937	113,050,751	39,816,670	43,580,048	96,526,578	106,080,898
Net revenue from railway operations	90,554,704	100,359,154	32,506,306	39,075,202	20,628,344	20,381,709	37,420,054	40,902,243
Railway tax accruals	29,343,887	29,641,922	12,506,805	12,053,389	6,031,904	6,222,128	10,805,178	11,366,405
Railway operating income	61,210,817	70,717,232	19,999,501	27,021,813	14,596,440	14,159,581	26,614,876	29,535,838
Equipment rents—Dr. balance	7,897,076	7,960,419	3,402,105	3,324,176	*69,025	*350,977	4,563,996	4,987,220
Joint facility rent—Dr. balance	2,951,988	3,135,629	1,670,894	1,735,412	290,728	292,178	990,366	1,108,039
Net railway operating income	50,361,753	59,621,184	14,926,502	21,962,225	14,374,737	14,218,380	21,060,514	23,440,579
Ratio of expenses to revenues (per cent)	71.9	72.4	74.6	74.3	65.9	68.1	72.1	72.2
Depreciation included in operating expenses	16,858,614	16,566,879	7,391,560	7,339,262	3,284,079	3,142,058	6,182,975	6,085,559
Pay roll taxes	8,504,296	6,801,605	3,562,212	2,820,875	1,449,733	1,100,769	3,492,351	2,879,961
All other taxes	20,839,591	22,840,317	8,944,593	9,232,514	4,582,171	5,121,359	7,312,827	8,486,444

FOR NINE MONTHS ENDED WITH SEPTEMBER, 1938 AND 1937

Miles of road operated at close of month†	234,679	235,598	58,018	58,276	44,685	44,787	131,976	132,535
Revenues:								
Freight	$2,048,860,383	$2,580,960,145	$796,165,447	$1,094,316,775	$416,420,756	$495,624,756	$836,274,180	$991,018,614
Passenger	306,299,343	334,048,245	167,253,058	183,301,806	40,915,499	46,493,892	98,130,786	104,252,547
Mail	69,086,340	71,166,146	26,407,623	27,216,530	12,013,492	12,457,420	30,665,225	31,492,196
Express	33,948,876	43,584,569	12,018,527	17,908,781	7,082,732	9,073,619	14,847,617	16,602,169
All other operating revenues	115,836,867	144,882,484	56,246,589	72,682,239	14,974,878	17,909,362	44,615,400	54,290,883
Railway operating revenues	2,574,031,809	3,174,641,589	1,058,091,244	1,395,426,131	491,407,357	581,559,049	1,024,533,208	1,197,656,409
Expenses:								
Maintenance of way and structures	313,833,742	382,810,988	113,370,917	150,502,608	57,461,769	65,609,290	143,001,056	166,699,090
Maintenance of equipment	496,960,797	631,032,894	204,198,388	286,017,512	96,805,120	113,387,821	195,957,289	231,627,561
Traffic	76,791,719	78,743,757	27,926,687	29,046,552	14,532,138	14,776,631	34,332,894	34,920,574
Transportation—Rail line	1,002,670,412	1,120,607,605	438,984,291	506,284,773	169,495,352	182,734,926	394,190,769	431,587,906
Transportation—Water line	3,510,628	4,242,574	.....	.....	.....	.....	3,510,628	4,242,574
Miscellaneous operations	28,459,317	30,949,837	12,448,128	13,675,057	3,415,441	3,803,513	12,595,748	13,471,267
General	96,010,881	111,614,325	38,057,254	46,935,108	18,269,084	20,191,636	39,684,543	44,487,581
Transportation for investment—Cr.	2,378,756	3,944,449	448,631	587,825	412,288	583,510	1,517,837	2,773,114
Railway operating expenses	2,015,858,740	2,356,057,531	834,537,034	1,031,873,785	359,566,616	399,920,307	821,755,090	924,263,439
Net revenue from railway operations	558,173,069	818,584,058	223,554,210	363,552,346	131,840,741	181,638,742	202,778,118	273,392,970
Railway tax accruals	255,625,988	249,224,346	108,657,913	111,324,145	50,245,586	54,105,648	96,722,489	83,794,553
Railway operating income	302,547,081	569,359,712	114,896,297	252,228,201	81,595,155	127,533,094	106,055,629	189,598,417
Equipment rents—Dr. balance	70,966,744	71,105,328	29,537,260	30,033,537	4,593,681	3,154,356	36,835,803	37,917,435
Joint facility rent—Dr. balance	26,506,680	27,424,879	14,253,743	15,265,917	2,953,205	2,867,944	9,299,732	9,291,018
Net railway operating income	205,073,657	470,829,505	71,105,294	206,928,747	74,048,269	121,510,794	59,920,094	142,389,964
Ratio of expenses to revenues (per cent)	78.3	74.2	78.9	73.9	73.2	68.8	80.2	77.2
Depreciation included in operating expenses	151,599,050	146,884,342	66,203,010	65,114,586	29,580,593	28,150,482	55,815,447	53,619,274
Pay roll taxes	73,693,639	46,539,975	30,827,033	27,182,844	13,112,871	7,778,855	29,753,735	11,578,276
All other taxes	181,932,349	202,684,371	77,830,880	84,141,301	37,132,715	46,326,793	66,968,754	72,216,277

† Represents an average of the mileage reported at the close of each month within the period.

* Deficit or other reverse items.

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

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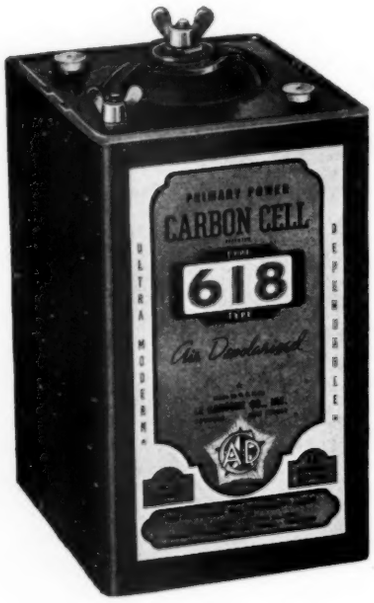

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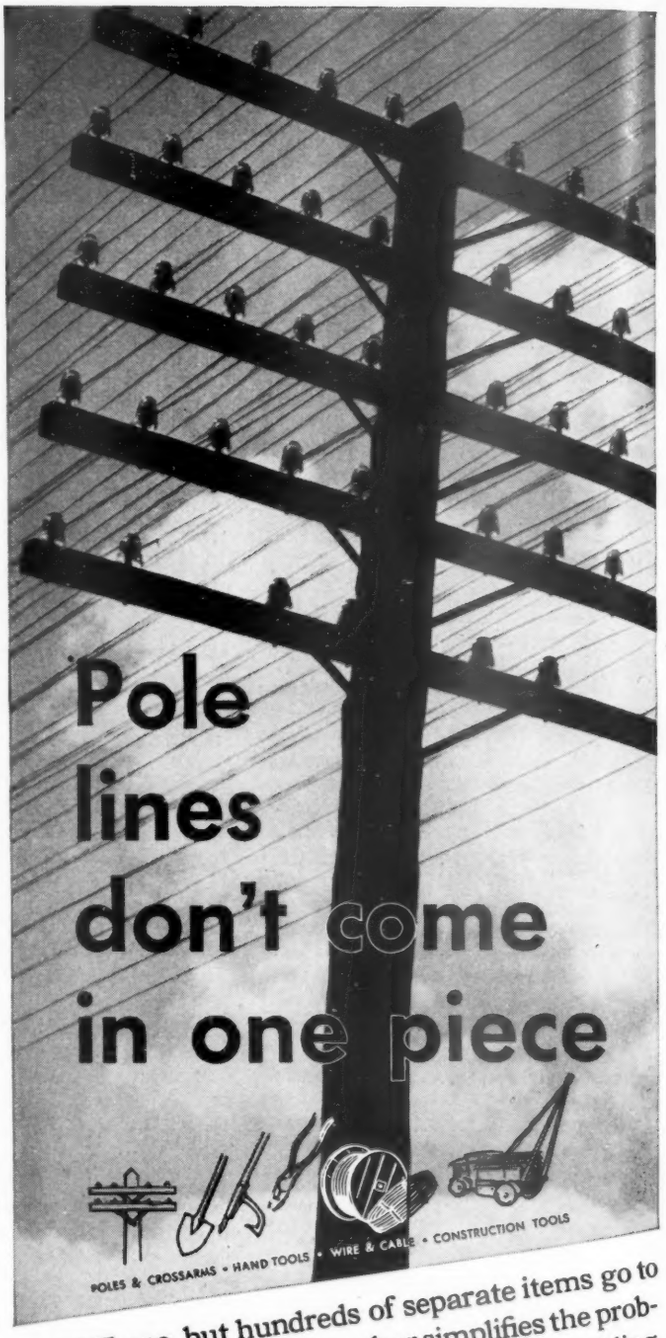

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